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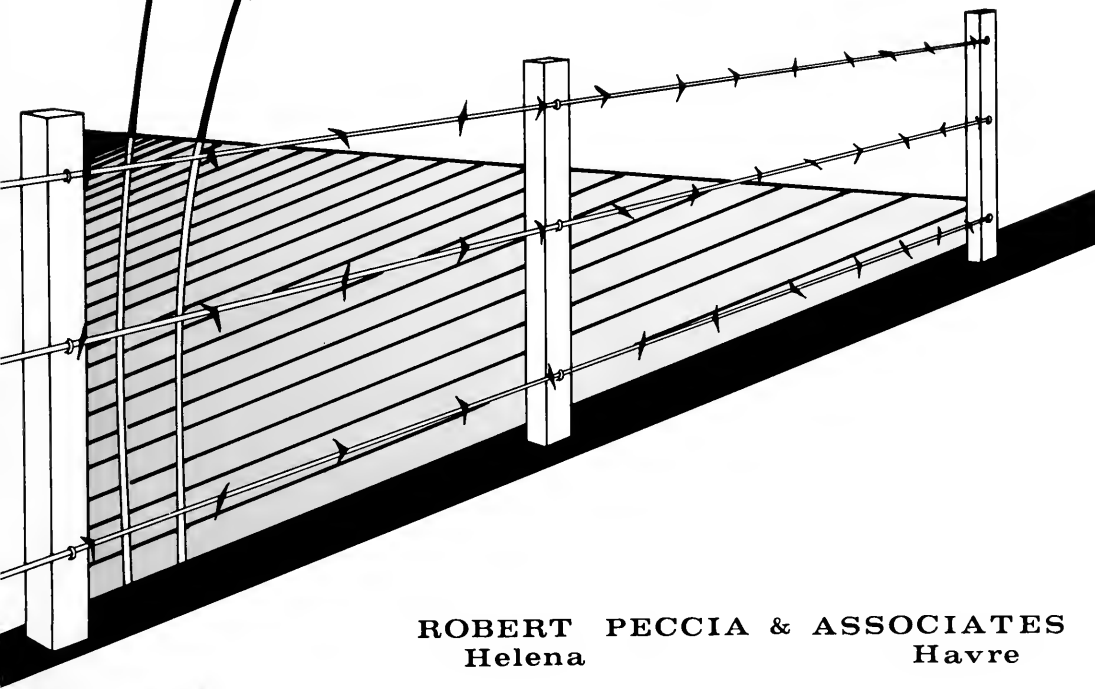
# McCONE COUNTY

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## COMPREHENSIVE PLAN



ROBERT PECCIA & ASSOCIATES  
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McCone County comprehensive plan /



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ROBERT PECCIA & ASSOCIATES  
*Planners - Engineers - Designers*  
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HELENA, MONTANA 59601 406/442-8160

December 12, 1979

McCone County Planning Board  
P.O. Box 47  
Circle, Montana 59215

Members of the Board:

Transmitted with this letter are fifty copies of the McCone County Comprehensive Plan. This report contains a summarization of analyses performed and recommendations for comprehensive development planning in McCone County, and is the culmination of two years of planning efforts by the McCone County Planning Board.

A report previously transmitted to the Planning Board entitled "McCone County Comprehensive Plan - Inventory and Analysis" contains the base line information that was used to formulate this plan. An additional report entitled "McCone County Comprehensive Plan - Implementation" contains recommendations on methods and procedures to accomplish the intent of the Comprehensive Plan.

During the course of this project the following products and services have been provided to the Planning Board:

McCone County Comprehensive Plan - Inventory and Analysis Report  
McCone County Comprehensive Plan Report  
McCone County Comprehensive Plan - Implementation Report  
Displays, Charts, Aerial Photographs and Maps  
Planning Board and Public Meetings

It should be stressed that McCone County faces an uncertain and challenging future. Much of the potential development in the county would create a major impact and could change the entire complexion of the area. These changes should be viewed cautiously and the potential impact of each proposed development should be analyzed carefully so that prevailing lifestyles will have minimal disruption, and so the benefits to the county are at least equal to the burden.

The preparation of the Plan will enable the county to objectively assess the potential impacts of the three scenarios analyzed in a general sense. Of even greater importance is the knowledge about the planning process and the awareness that McCone County residents have achieved, and the process for local review that has developed in the past few years.

Lastly, it should be recognized that planning is a dynamic process. As conditions change or as existing development proposals are modified and/or new proposals submitted, the planning elements must be flexible to accomodate these changing conditions.

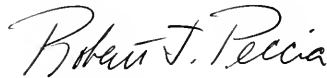


McCone County Planning Board  
December 12, 1979  
Page 2

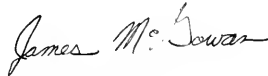
We would like to express our sincere appreciation to McCone County for the opportunity to provide these services, and for the fine cooperation and understanding that we have received throughout the course of the study.

Yours very truly,

ROBERT PECCIA & ASSOCIATES

A handwritten signature in cursive script that reads "Robert J. Peccia".

Robert J. Peccia, P.E.  
President

A handwritten signature in cursive script that reads "James McGowan".

James McGowan  
Senior Planner



## **ACKNOWLEDGMENTS**

### **McCone County Planning Board**

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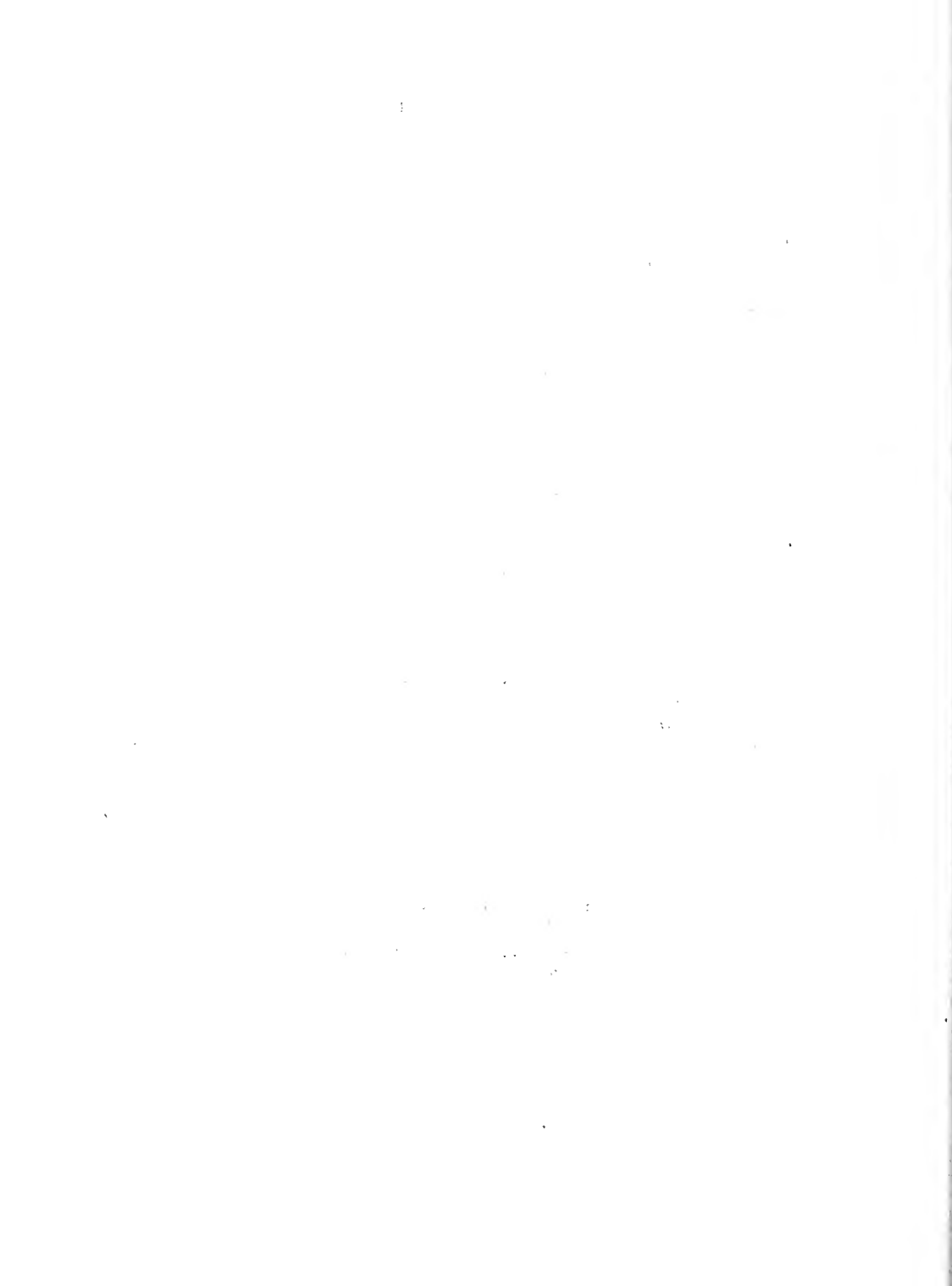
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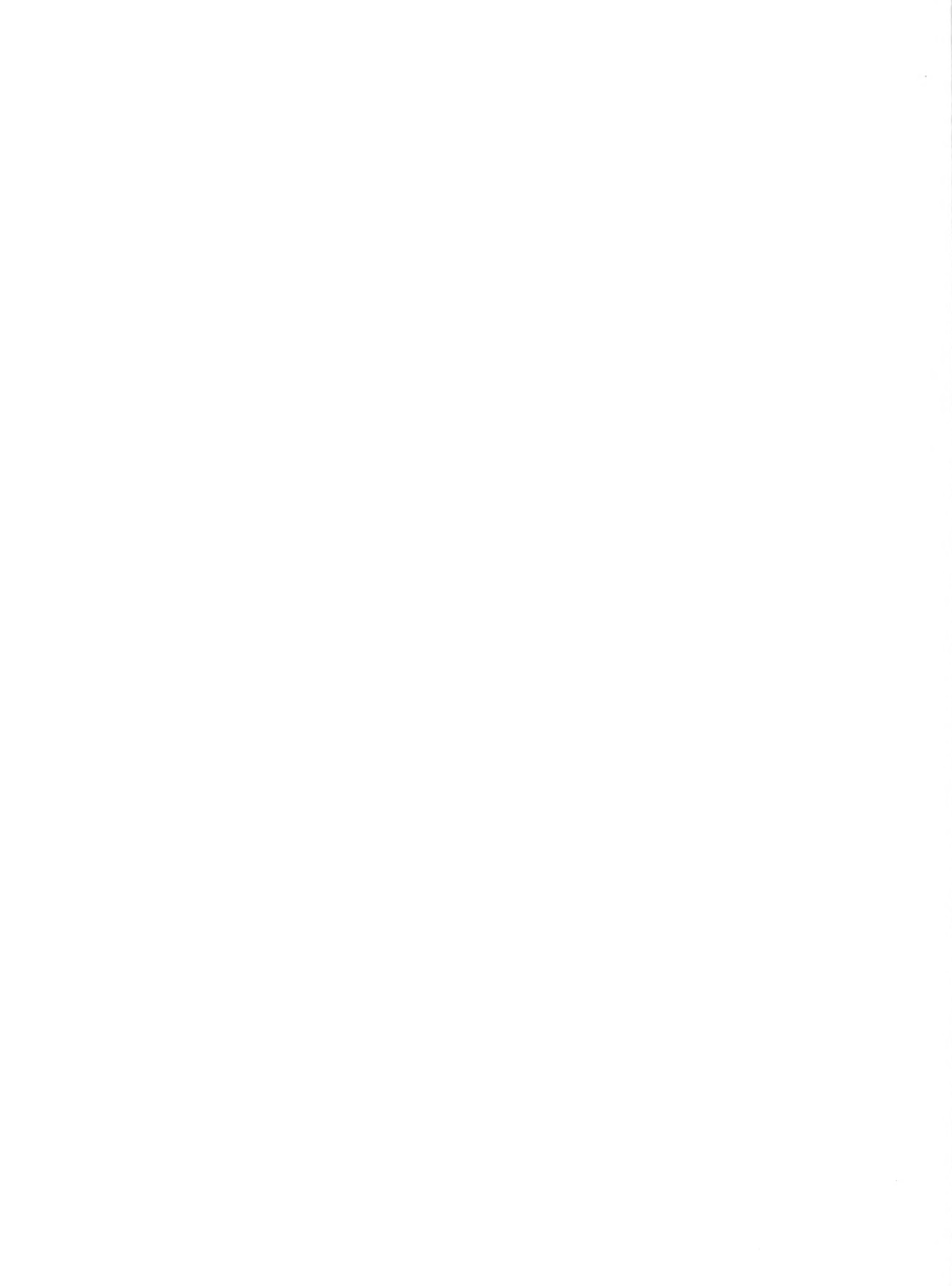
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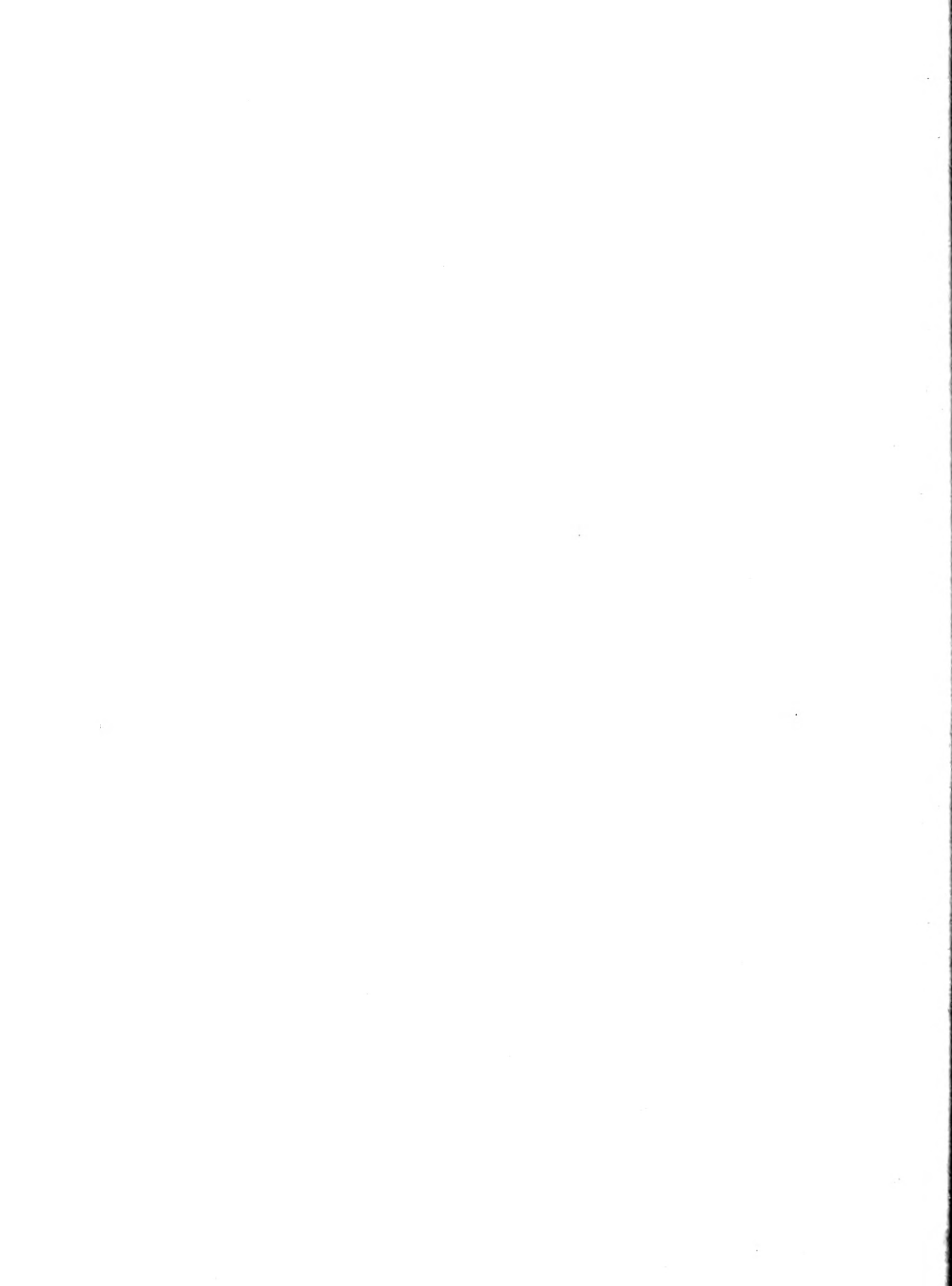
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# **CHAPTER I**

## **INTRODUCTION**



## CHAPTER I

### INTRODUCTION

#### 1. AUTHORIZATION

The Comprehensive Plan has been prepared as part of the planning services to be provided to the McCone County Planning Board by the consultant according to a contractual agreement made in 1977. Funds for the study were provided through a grant administered by the State of Montana Coal Board of the Department of Community Affairs.

#### 2. PROJECT SCOPE AND PURPOSE

The purpose of the project is to establish a planning process which is capable of guiding community development in the future. Because the success of an on-going planning program is dependent upon the acceptance of this process by the local citizenry and on the day-to-day administration of the plan by the planning board, an effort has been made to emphasize local participation throughout the course of the study. This was accomplished through a series of public meetings and workshops held near the beginning and end of the project and through a county planning questionnaire distributed before development of the final plan document.

Planning policies and recommendations expressed in this report are based on the findings of an extensive inventory of local resources and on estimates of future needs in the county created by varying degrees of population growth. Basically, the intent of the study is to identify the impact of the population increase on community facilities and services and to direct new development to areas most suitable for urban-oriented expansion.

#### 3. REPORT ORGANIZATION

In order to present the methodology, conclusions and recommendations of the plan in an orderly and easily comprehensible fashion, the project has been conducted in three distinct phases and the results published in three separate reports. The Comprehensive Plan report (Phase Two, as this document will be referred to) indicates the policy of the planning board regarding future land development and quantifies impacts of population growth on housing, transportation systems and community facilities (to the extent possible). The Inventory and Analysis Report, along with the large-scale display maps kept in the planning office, completes the first phase of the project and provides an extensive data base for reference in making future planning decisions. Phase Three is contained in a report entitled McCone County Comprehensive Plan - Implementation. The methods of making the plan a workable legal document



through enforcement of certain types of regulations are discussed in this account. Included in the discussion are descriptions of an action plan, a capital improvements program and zoning and subdivision regulations.

One of the determining factors in shaping the plan is the consideration of growth possibilities in the county which may be experienced as a result of exploitation of vast coal resources in the area. Within this context, quantities are provided in the housing, community facilities, transportation and land use sections of the report delineating the degree of impact for each of three development scenarios evaluated (see the following chapter for a description of scenarios). Each chapter includes an evaluation of the effect of population growth on the rural areas of the county (where applicable) and on isolated developed areas within the county (primarily Circle and Brockway).

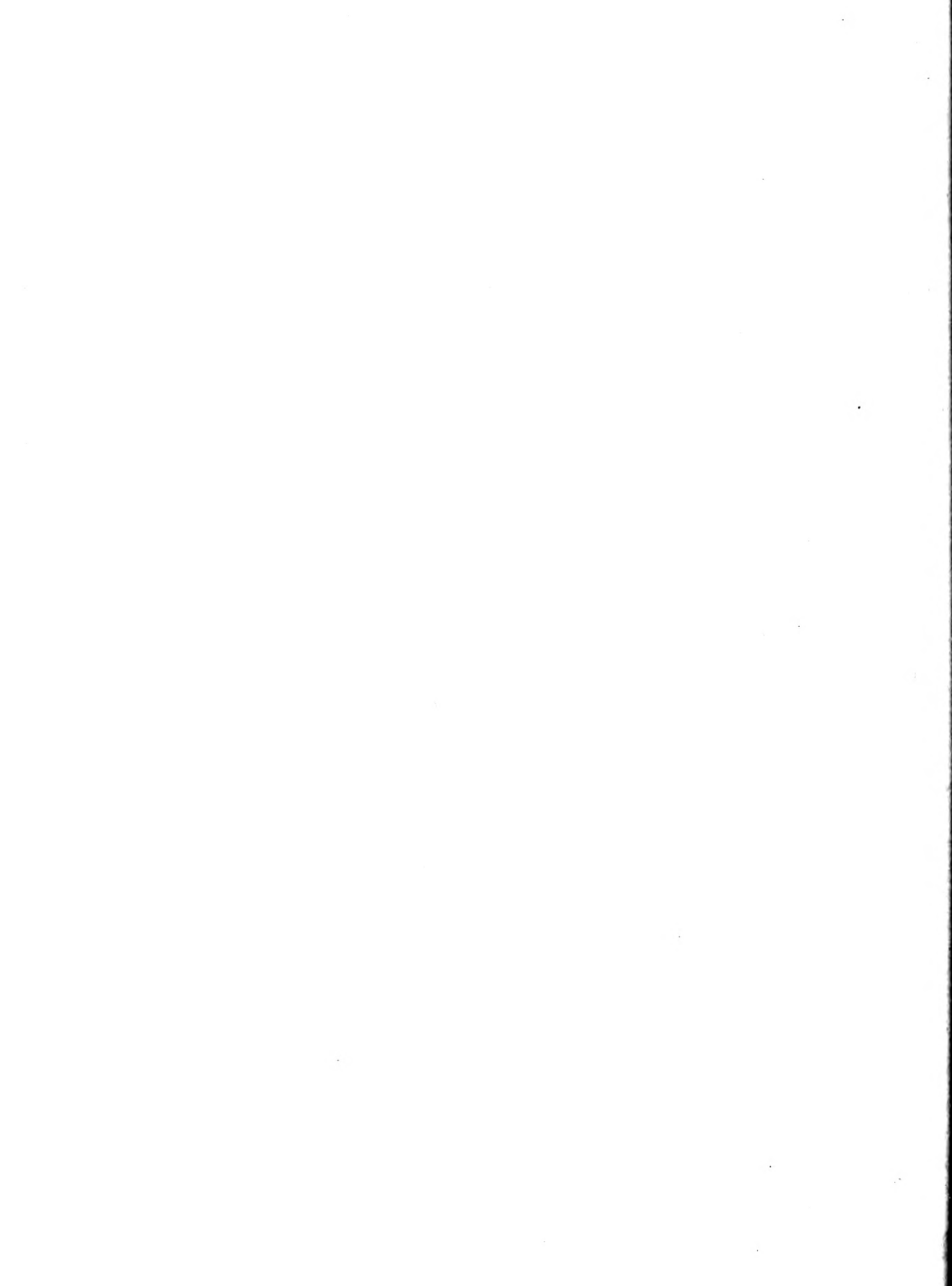
The material included in Appendix A shows the planning questionnaire which was distributed in the fall of 1979 by the McCone County Planning Board. The voter registration list in the courthouse was used as a basis for distribution of the form and a stamped return envelope was included in an effort to maximize the return to distribution ratio. The survey was relatively successful since nearly 28 percent of the forms were returned. Of 1,650 which were sent out, 455 were returned and tabulated by the McCone County planning department. These tabulations were carefully reviewed to obtain the general attitude of the local population prior to final drafting of the plan. The response percentages are indicated on the form in this report, and a more detailed analysis of the results is available in the planning office.



A stylized illustration of two wheat stalks rising from a fenced field. The field is enclosed by a fence with three strands of barbed wire. The wheat stalks are positioned on the left side of the field, with their heads reaching towards the top of the page. The background is plain white.

## **CHAPTER II**

# **McCONE COUNTY PLANNING PROCESS & GROWTH PROSPECTS**





## CHAPTER II

### McCONE COUNTY PLANNING PROCESS AND GROWTH PROSPECTS

#### 1. GENERAL PLANNING PROCEDURE

The process of planning for future development is a complex and time-consuming undertaking, but if the plan is carefully prepared considering the special needs of the local population and if the intent of the plan is manifest in implementation tools, the result can be extremely rewarding for the community or area under consideration. The general procedure followed in the establishment of such a planning process has been used with success in many other Montana municipalities and to a lesser degree for broader jurisdictional entities such as counties (history has shown that although plans may be successfully adopted by larger areas, methods of enforcement frequently do not reach the operational phase). The principles underlying the drafting of a comprehensive plan are likewise fairly consistent throughout the state and, for that matter, throughout the nation. The following is an indication of the major steps followed in the development of a plan.

#### ☐ PRELIMINARY STATEMENT OF GOALS AND OBJECTIVES

#### ☐ INVENTORY AND ANALYSIS

Data Collection

Base Mapping

Population

Economics

Land Use and Land Ownership

Housing

Land Capability

Community Facilities

Transportation

Subdivision Activity

Fiscal Study

#### ☐ RE-EVALUATION OF GOALS AND OBJECTIVES

#### ☐ DEVELOPMENT OF COMPREHENSIVE PLAN

Housing Plan

Community Facilities Plan

Transportation Plan

Land Use Plan



## □ IMPLEMENTATION

Action Plan

Capital Improvements Program

Planning and Development Standards

A prime advantage of comprehensive planning is that a development review process and the criteria for review are established. These criteria are evaluated during the inventory and analysis phase of the plan and substantiated at the time of final adoption of goals and objectives. The desired direction of future development, as indicated through the analysis of inventory data and by policies stated in goals and objectives, is then provided in a published document entitled "The Comprehensive Plan". Although much of the background data used in the preparation of the plan is technical in nature (because it is imperative to quantify the extent of future impacts on land use and community services), the recommendations of the plans are merely general statements contained in the text of the report with geographically specific advice provided in the land use plan maps.

The Comprehensive Plan is not an end in itself, but rather a tool to be used (in conjunction with zoning or other land use legislation) by local government leaders in their efforts to promote orderly development. It is emphasized, however, that planning is a continuing dynamic process requiring re-evaluation and refinement as changing physical, social and financial conditions may require.

## 2. ACCELERATED GROWTH PROSPECTS – PROJECT DESCRIPTIONS AND PLANNING METHODOLOGY

In anticipation of future coal development projects in McCone County, the plan has been drafted in a manner which allows for approximation of impacts which may occur as a result of three different growth scenarios. Because these energy developments will affect land use, housing supply and demand and public facilities in varying degrees, relevant quantities for future needs of this type (by scenario) are included in the appropriate chapters of this report. A complete description of each alternative selected for consideration in the plan is provided below. Assumptions associated with each alternative are also listed.

### SCENARIO NUMBER 1: NO COAL DEVELOPMENT (BASE LINE)

Future population growth in the county will be slight, with all of the population increase occurring in the City of Circle. This projection assumes a continuation of the recent trend as indicated in the Inventory and Analysis report.



## SCENARIO NUMBER 2: SMALL COAL MINE

Population projections are based on employment requirements for a coal mine with a minimum production of 250,000 tons per year. Because of the uncertainty of the exact size of the mine, the employment figures were adjusted slightly upward to include a range in production up to about two million tons per year (also considered a small coal mine by strip mining standards). Therefore, the assumed employment levels of 100 for a two-year construction period and 50 for a 20-year operational period are liberal estimates (based on a comparison with other mines currently in production).

## SCENARIO NUMBER 3: ELECTRIC GENERATING OR COAL GASIFICATION PLANT

### Alternate 1: Electric Generating Plant

Population projections are based on employment requirements for a 440 megawatt electric generating plant at the mine site or in the immediate vicinity. The associated mine necessary to feed the generators is also considered in the employment requirements. It is assumed that construction would take place over a three-year period and would peak during the second year at 1,376 employees. Figures include 100 workers per year for construction of transmission facilities. Operation of the plant and associated mine would require a total of 160 employees.

### Alternate 2: Coal Gasification Plant

Population projections are based on employment requirements for a 2,300 ton per day liquid ammonia plant or a 2,174 ton per day fuel grade methanol plant. Combined total construction labor averages 1,200 employees over a three-year period. Operation of the plant and associated mine would require 188 employees.<sup>1</sup>

Common assumptions to each of the coal development scenarios used in the calculation of population growth impact are as follows:

<sup>1</sup> From Preliminary Engineering Study and Conceptual Plant Design for the Circle West Project of Dreyer Bros., Inc.



- All proposals would create indirect population growth in the commercial and service industries.
- Total direct plus indirect population during construction is equal to 1.5 times the construction population.
- Total direct plus indirect population during operation is equal to the project population plus 1.7 times the project population.
- Construction population is figured at 2.3 persons per household.
- Operational population is figured at 3.0 persons per household.

NOTE: The employment and population levels indicated in the projection for each scenario should not be construed as "actual" figures derived from company coal development proposals. At the time of publication of this report, no permit applications for facility or mine siting had been submitted to the state reviewing agency (Departments of Natural Resources and State Lands), although several baseline studies to be used in the preparation of environmental impact statements have been completed. Therefore, all estimates shown in the report were developed by the consultant and are only approximations of conditions which could result from implementation of the scenarios described. Any subsequent estimates should be added to the baseline projection.





The image features a stylized illustration of two wheat stalks with detailed grain heads, curving upwards from the bottom left towards the top center. Below the stalks, a barbed wire fence runs diagonally across the frame, supported by wooden posts. The fence is composed of three strands of wire with sharp barbs. The entire scene is rendered in a simple, graphic style with black outlines and some grey shading for the wheat and fence.

## **CHAPTER III**

# **GOALS & OBJECTIVES**



## CHAPTER III

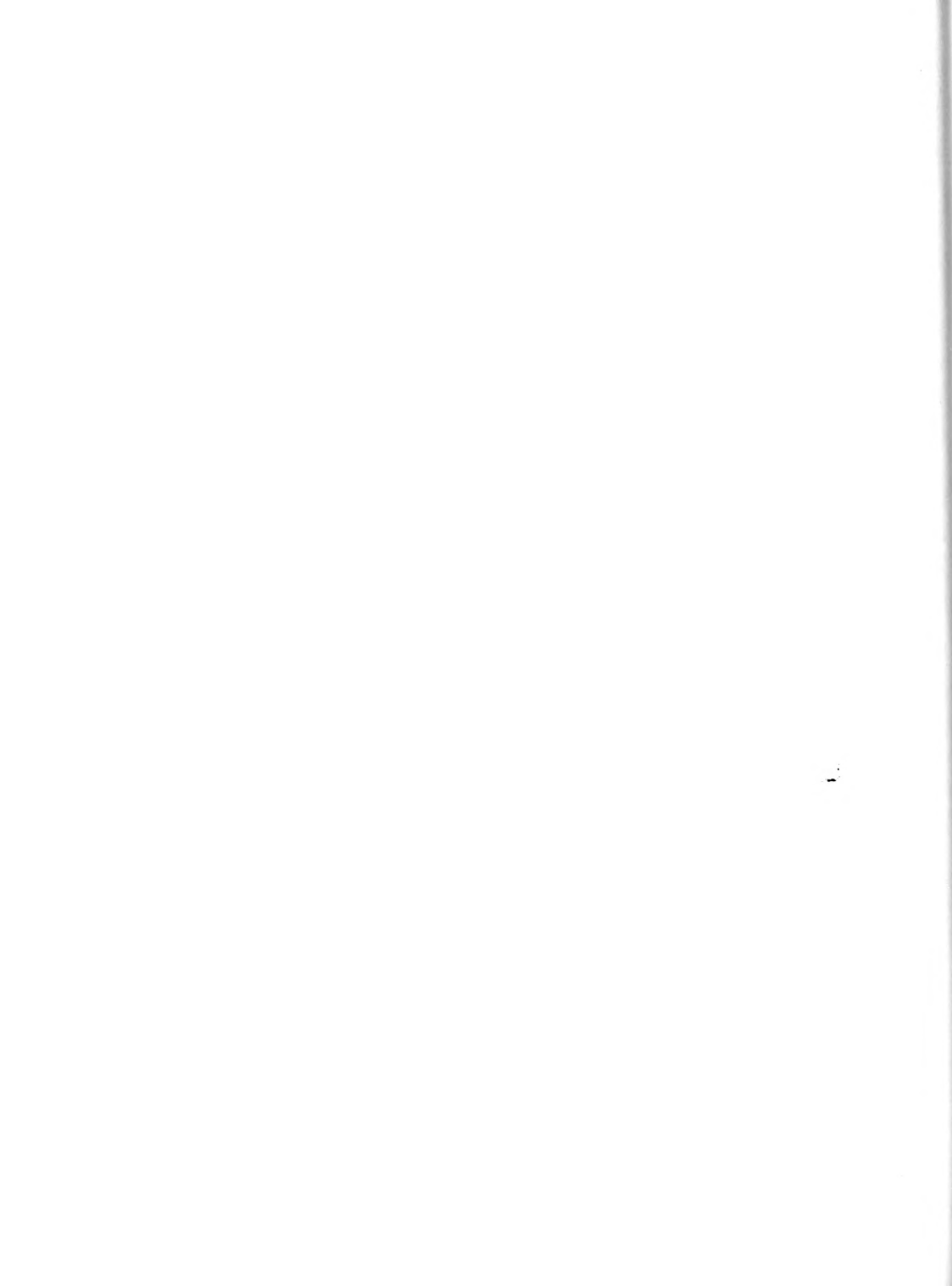
### GOALS AND OBJECTIVES

One of the most important considerations in the planning process is the development of realistic goals and objectives which will result in an orderly and predictable use of the land in years to come. Because the statement of these goals and objectives is a direct reflection of the desired policy of the planning board (and of the citizens of McCone County through the public input program), the listing was used as a guide in preparation of the Comprehensive Plan and should be consulted during the development review process to insure that proposed changes in the use of the land are in keeping with good planning principles.

Following the preparation of a preliminary list of goals and objectives which incorporated the ideas of the governing bodies and various community organizations in the county, a final listing was drafted by the consultant and the planning board and is shown below.

#### McCone County Goals and Objectives

- GOAL I**      Provide for the orderly development of the Circle - McCone County Planning Area.
- A.    Improve the zoning regulations to reserve adequate space for residential, commercial, and industrial expansion in Circle and within one mile of the present city limits.
  - B.    Determine feasibility of zoning for Brockway and other critical areas in the county.
  - C.    Update the local subdivision regulations to regulate development according to state law.
  - D.    Determine feasible areas for new development based on available services, land capabilities and existing development.
  - E.    Promote the establishment of a McCone County housing authority.
- GOAL II**     Improve transportation facilities in McCone County.
- A.    Encourage improvement of all primary, secondary and off-system roads in the county.
  - B.    Determine a suitable location for a railroad crossing in to the Eynon-Lehman Addition.
  - C.    Upgrade the residential streets in the Circle area.
  - D.    Make the improvements recommended in the Airport Master Plan.



- GOAL III**      Improve the quality of community services while maintaining reasonable cost for the services.
- A.    Review proposed subdivisions for logical extension of public roads, and sewer and water lines.
  - B.    Improve solid waste collection and disposal systems.
  - C.    Improve and expand recreational facilities and programs in the planning area.
  - D.    Extend and upgrade public sidewalks in the downtown area, particularly along Highway 200. Establish a program for improvement of residential district sidewalks.
  - E.    Upgrade educational and health care facilities in the county.
- GOAL IV**      Improve the economic base of McCone County.
- A.    Promote the location of new commercial establishments in Circle.
  - B.    Improve the tourist industry by updating tourist attraction facilities such as the museum.
  - C.    Evaluate the feasibility of establishing a truck stop in the Circle area.
- GOAL V**      Improve the agricultural base of McCone County.
- A.    Look into the feasibility of developing alcohol production in the county.
  - B.    Evaluate rail and truck transportation needed for movement of agricultural commodities.
  - C.    Promote the establishment of new industry serving agriculture in the McCone County area.
  - D.    Support programs which will maintain optimum air and water quality needed for agricultural purposes.



The image features a stylized illustration of two wheat stalks with grain heads in the upper left corner. Below them, a barbed wire fence with three strands and wooden posts runs diagonally across the lower half of the frame. The fence is set against a background of diagonal hatching lines. The overall style is minimalist and graphic.

## **CHAPTER IV**

## **HOUSING PLAN**





## CHAPTER IV

### HOUSING PLAN

#### 1. GENERAL

During the inventory and analysis phase of the Comprehensive Plan, the housing situation in McCone County was described in detail and evaluated by housing type, geographical location and structural condition. Housing tenure and vacancy status were also discussed and the data was compared with 1970 census figures in order to illustrate conspicuous changes in housing demand and also to determine the magnitude of population growth during the decade. The principal utility of the analysis, as it relates to the production of this report and to planning in general, is that it allows for the development of two important deductions upon which much of the housing plan is based. First, the population projections evolved through the use of the housing data and became the baseline for the coal development population predictions. Second, the investigations of the inventory data by type of structure and by owner-renter status is the basis for the estimates regarding preference in housing demand (i.e., single family, multi-family, or mobile home.)

Since the population and housing elements of the plan are directly proportional, it is appropriate that population projections be included in a discussion of future housing needs. The purpose of this chapter is to provide estimates of the housing situation for the future in light of several possible growth alternatives. These alternatives are described in Chapter II.

#### 2. McCONE COUNTY

The most convenient measure of an area's economic strength and growth is through an analysis of the population trends. The recent trend for McCone County is one of stability with relatively little growth to the turn of the century under normal conditions (documentation is furnished in the Inventory and Analysis Report). However, the implementation of coal development projects could change the outlook for the future dramatically, affecting every facet of the economic climate, particularly the housing market and associated public facilities. An indication of varying degrees of population impact in the county is contained in the following table. All figures include the rural and developing areas of the county.



TABLE IV - 1  
McCONE COUNTY  
POPULATION PROJECTIONS

Year	Development Scenario			
	1 (Base Line)	2* (Small Coal Mine)	Alt. 1 (Electric Generator)	3* Alt. 2 (Coal Gasification)
1978	3403	-	-	-
1980	3408	-	-	-
1985	3435	3840	4152	6885
1990	3459	3867	4758	4987
1995	3482	3894	4792	5022
2000	3505	3921	4825	5057

\* Estimates reflect both direct and indirect employment requirements.

As shown, the total population of the county will increase by approximately 400 people by 1985 under Scenario No. 2 conditions and could jump as high as 6885 if construction were started on a coal gasification plant. Because it is assumed that the construction period for any of the alternates would take place prior to 1990, all figures from 1990 through 2000 reflect operational employment requirements only. A distorted impression of the data for the 1985 point estimate is created unless the period for 1980 to 1990 is evaluated on a year-by-year basis showing project construction periods. The analysis is presented graphically in FIGURE 1 and illustrates the population estimates for the planning period as well as the corresponding housing requirements for each level of development. The most striking characteristic of the graph is the disproportionately high population level caused by construction work forces during Scenario No. 3 alternates. Housing demand created during construction, however, is short-lived and drops back to a normal growth rate at the beginning of the operational phase. It should be emphasized that, although the growth rate returns to normal conditions, the permanent population level will be much higher than would occur under base line conditions. This high "long-term" population and housing level is the one which most affects the need for community services and, therefore, the one about which we are most concerned for the purpose of this plan. The highest long-term population level is projected to occur during the operational phase of the liquid ammonia or fuel grade methanol plant (Scenario No. 3 — Alt. 2), and would require 566 more housing units by the year 2000. In contrast normal growth conditions would require only 36 additional units for the same time period.



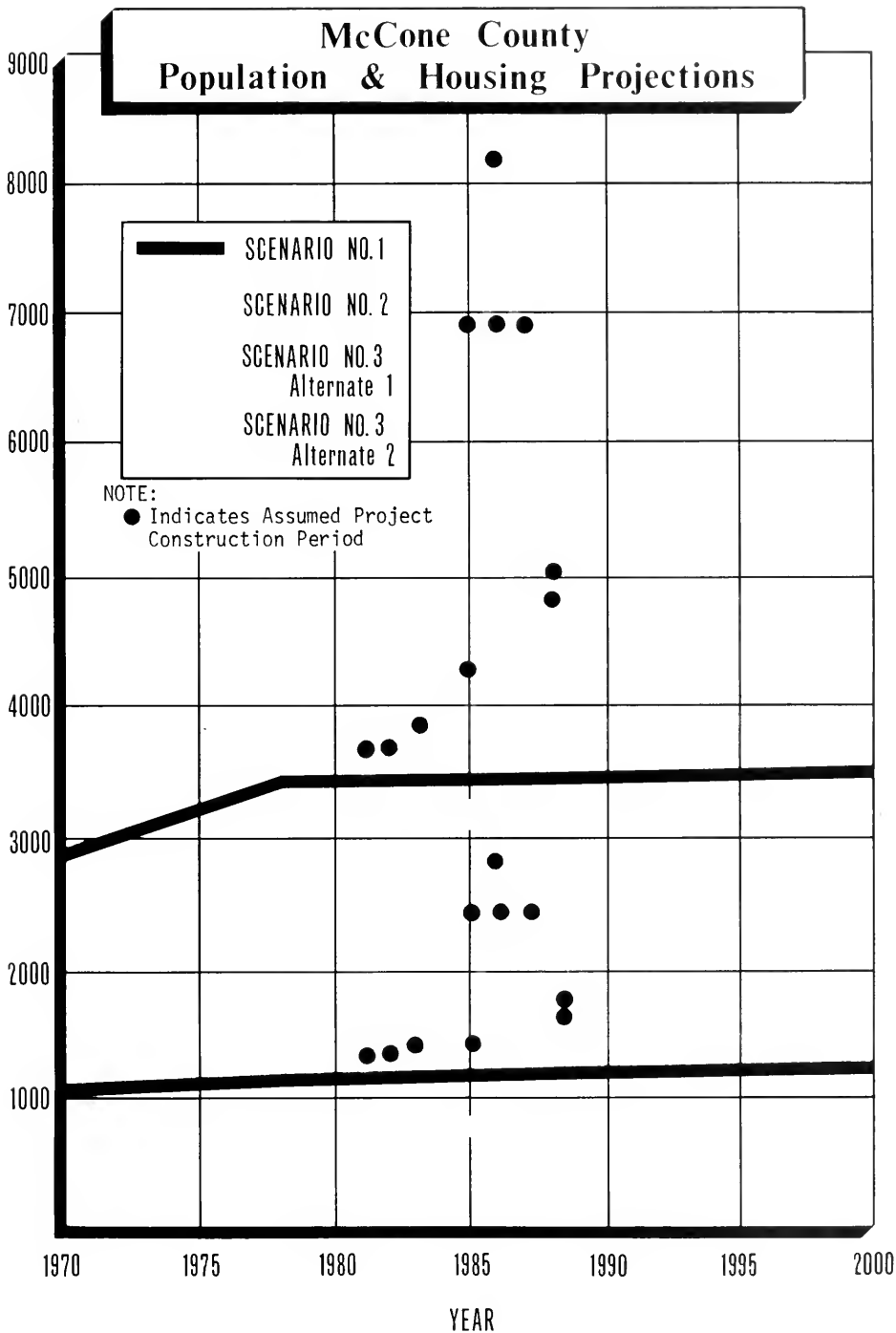


FIGURE 1



Construction period housing requirements could reach a high of 2748 for Scenario No. 3 - Alternate 1 during the second building year (1607 over existing supply). The small coal mine development, however, would not create a high construction period demand. These figures are shown in tabular form in Appendix B and are summarized in Figure 1.

Since the impacting agency is primarily responsible for construction period housing needs, no special provisions are made for these temporary units in the Land Use Plan. It is assumed that the needs will be accommodated by a work force townsite at the Dreyer Brothers mining area. If it is necessary to locate some temporary housing units in existing communities, they could be located in residential expansion areas shown on the Land Use Plan map. They should be restricted to areas designated for mobile home park development. These areas will be specified by the Planning Board in the low-density residential area and shown on the zoning map.

### 3. DEVELOPING AREAS OF THE COUNTY

Approximately 70 percent of the permanent population increase generated by coal development projects is expected to be centered in Circle. According to assumptions used in the development of the plan, 20 percent of the impact growth would go to Brockway and 10 percent would be distributed to the Fort Peck-Missouri River area.

Population projections by scenario for the City of Circle are shown in Table IV-2 and illustrated in Figure 2 on the following page. The 1978 population estimate for Circle resulted in a figure of 1270 persons (considered a liberal estimate because it is based on a relatively high occupancy rate) which, when projected for a 22-year period shows a total increase of only 217. The margin of growth can be considered insignificant and would have only a slight effect on housing and community services. As shown in the table, the population level makes a significant jump during Scenario No. 2 and reaches critical proportions during either of the Scenario No. 3 alternates.

The figures in Table IV-2 show the total population for the planning period for each alternative as well as the estimated effect of construction work forces. The relative magnitude of population growth under each scenario is emphasized in Figure 2.





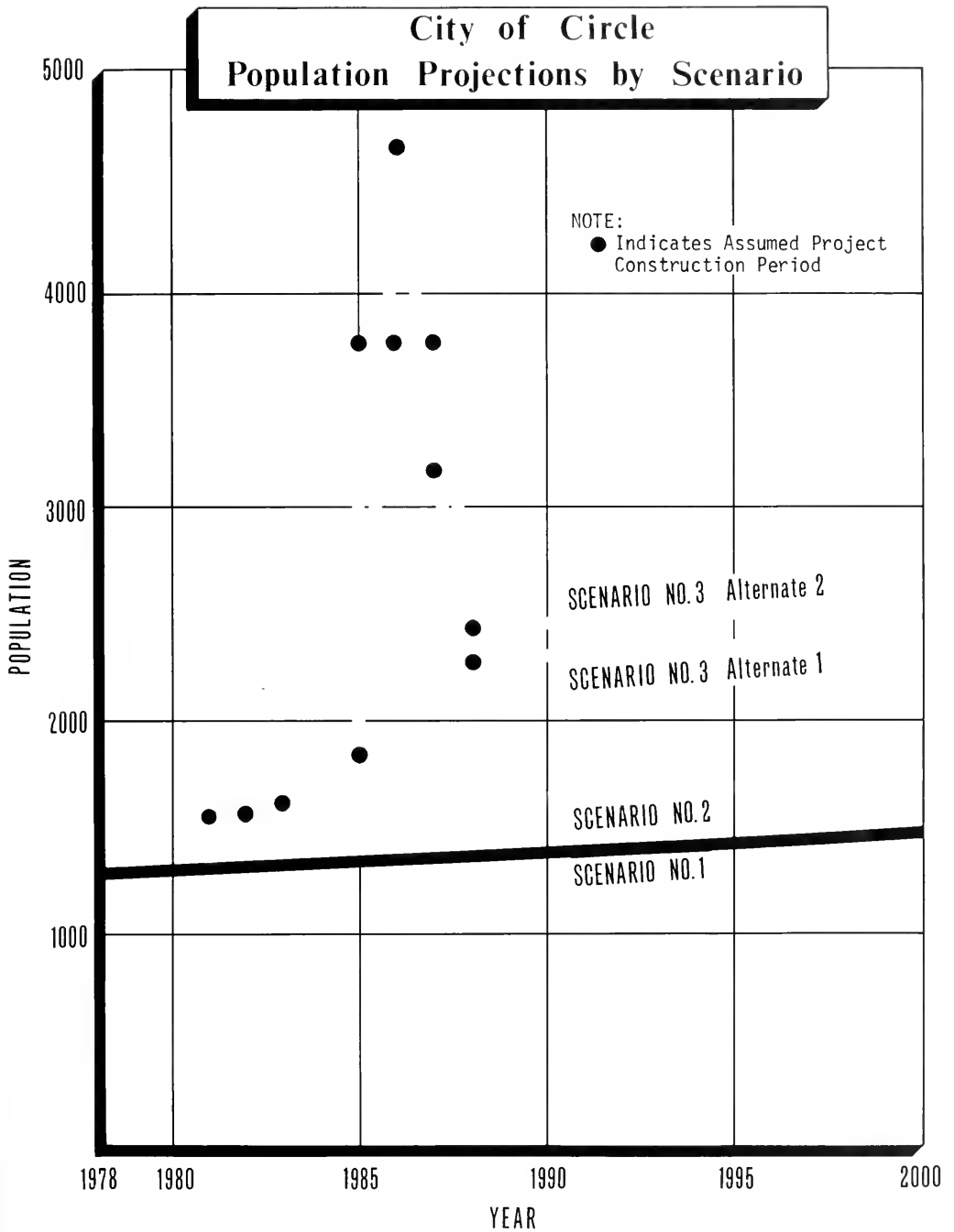


FIGURE 2



TABLE IV-2  
CITY OF CIRCLE  
POPULATION PROJECTIONS

Year	Development Scenario			
	1	2*	3*	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2 (Coal Gasification)
1978	1270	—	—	—
1980	1288	—	—	—
1981	1297	1583 (Constr.)	—	—
1982	1306	1547 (Constr.)	—	—
1983	1316	1598 (Begin Oper.)	—	—
1984	1325	1607	—	—
1985	1335	1616	1839 (Constr.)	3752 (Constr.)
1986	1344	1625	4670 (Constr.)	3761 (Constr.)
1987	1354	1634	3183 (Constr.)	3770 (Constr.)
1988	1364	1643	2277 (Begin Oper.)	2435 (Begin Op.)
1989	1374	1652	2286	2444
1990	1384	1664	2295	2453
1995	1434	1712	2343	2501
2000	1487	1760	2391	2549

\* Estimates reflect both direct and indirect employment requirements.

Housing demand created in Circle as a result of possible coal development projects ranges from 164 additional units (Scenario No. 2) to 427 units by the turn of the century if a coal gasification project becomes a reality. Looking at the construction requirements of even the smallest of these two alternatives accentuates the fact that there will be a need for substantial upgrading of the housing market in the not-so-distant future (1981 or 1982). The operational phase of Scenario No. 2 is assumed to begin prior to 1985; therefore, there will be a need for 116 new homes in or near Circle by that time. Estimates of total housing demand for the short- and long-range planning periods are listed in the following table.



TABLE IV-3  
CITY OF CIRCLE  
HOUSING REQUIREMENTS  
(NO. OF ADDITIONAL YEAR-ROUND HOUSING UNITS)

Planning Period	Development Scenario			
	1	2	3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2* (Coal Gasification)
1978-1985	21	116	189	21
1985-2000	48	48	185	406
TOTAL —	69	164	374	427

\*For tabulation purposes, the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978-1985 planning period.

In the interest of producing a land use plan which is cognizant of the trend in the type of housing people are most likely to purchase, the total number of additional housing units needed in Circle has been broken down into three categories. Single family, multiple family and mobile home developments represent different densities, and consequently may have a significant effect on the amount of land set aside for residential purposes. It is also an important consideration that the demand for one type or the other changes as the composition of the labor force changes. As the percentage of new population which is coal-related increases, so does the demand for multiple-family and mobile home living units. This assumption, along with others listed in Appendix B, was used to arrive at the figures shown in Table IV-4 on the following page.



TABLE IV-4  
CITY OF CIRCLE  
HOUSING REQUIREMENTS  
BY TYPE OF HOUSING UNIT  
(1978-2000)

Type of Housing	Development Scenario			
	1	2	3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2 (Coal Gasification)
Single Family	47	56	77	82
Multi - Family	8	27	69	80
Mobile Home	14	81	228	265
TOTAL—	69	164	374	427

It should be noted that the relative demand for one type of housing versus another is influenced by a multitude of variables, the most important of which are the availability of adequately sized parcels of land and the money market situation. The availability of land for future development does not appear to be a problem in Circle. However, in view of the fact that the most recent trend in the new real estate market is in a downward direction because of rising interest rates, the cheaper forms of housing are predicted to occupy the lion's share of demand. Consequently, mobile home and multiple-family living is predicted to occupy a slightly larger share of the market than we would normally estimate. As shown in the previous table, additional land for all forms of housing will be needed in the future, but during the implementation of Scenario No. 3 alternates, more land will be needed for multi-family and mobile home park projects. This shift in housing demand is readily apparent in Figure 3, which shows estimated permanent housing needs by type of dwelling unit.

High temporary housing demand created by construction work forces could conceivably have an effect on the market in Circle. Although preliminary indications are that a "company" housing development would be built to alleviate this short-term demand, a chart has been prepared showing maximum impact in Circle during construction if company living quarters were





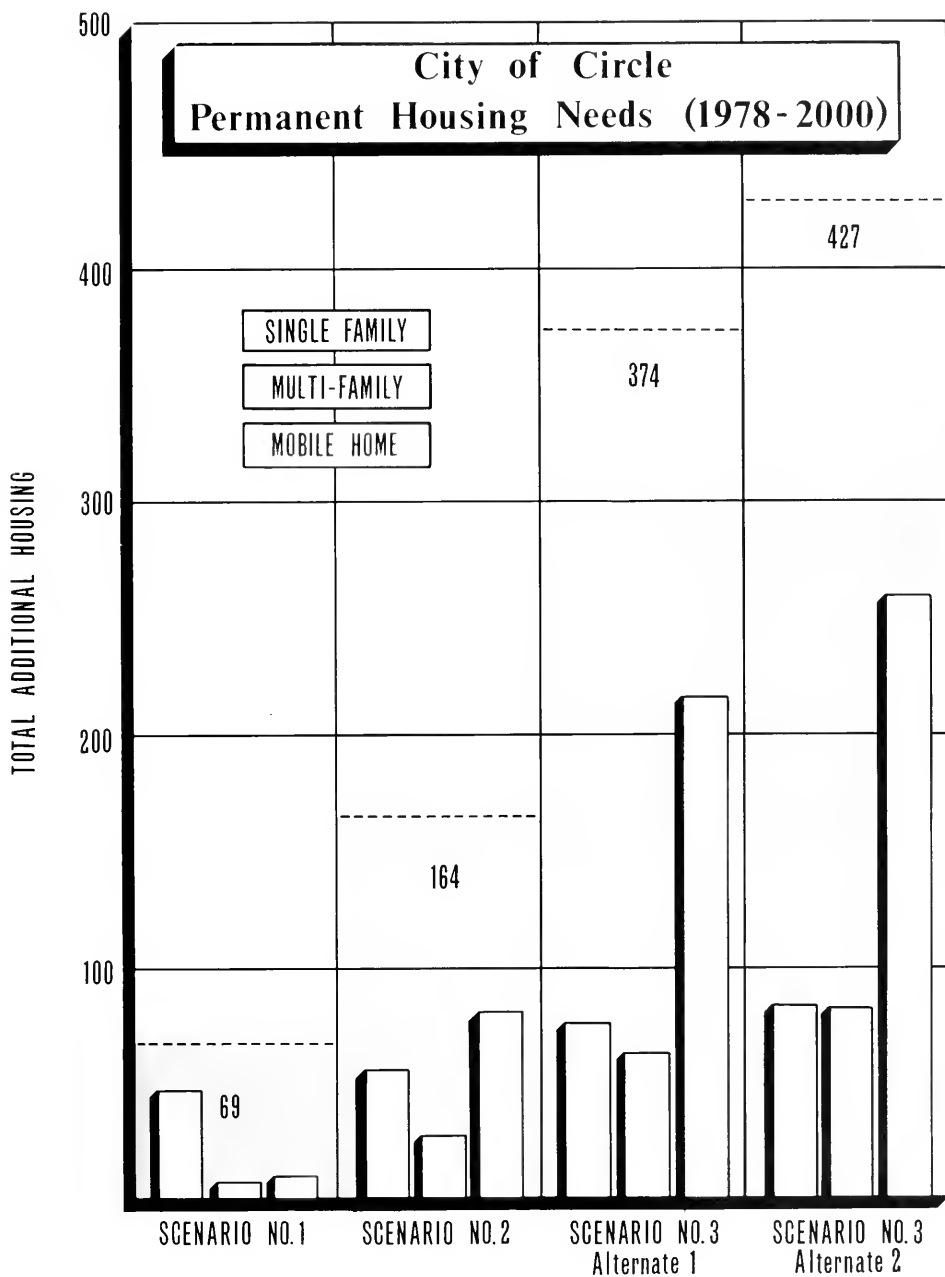


FIGURE 3



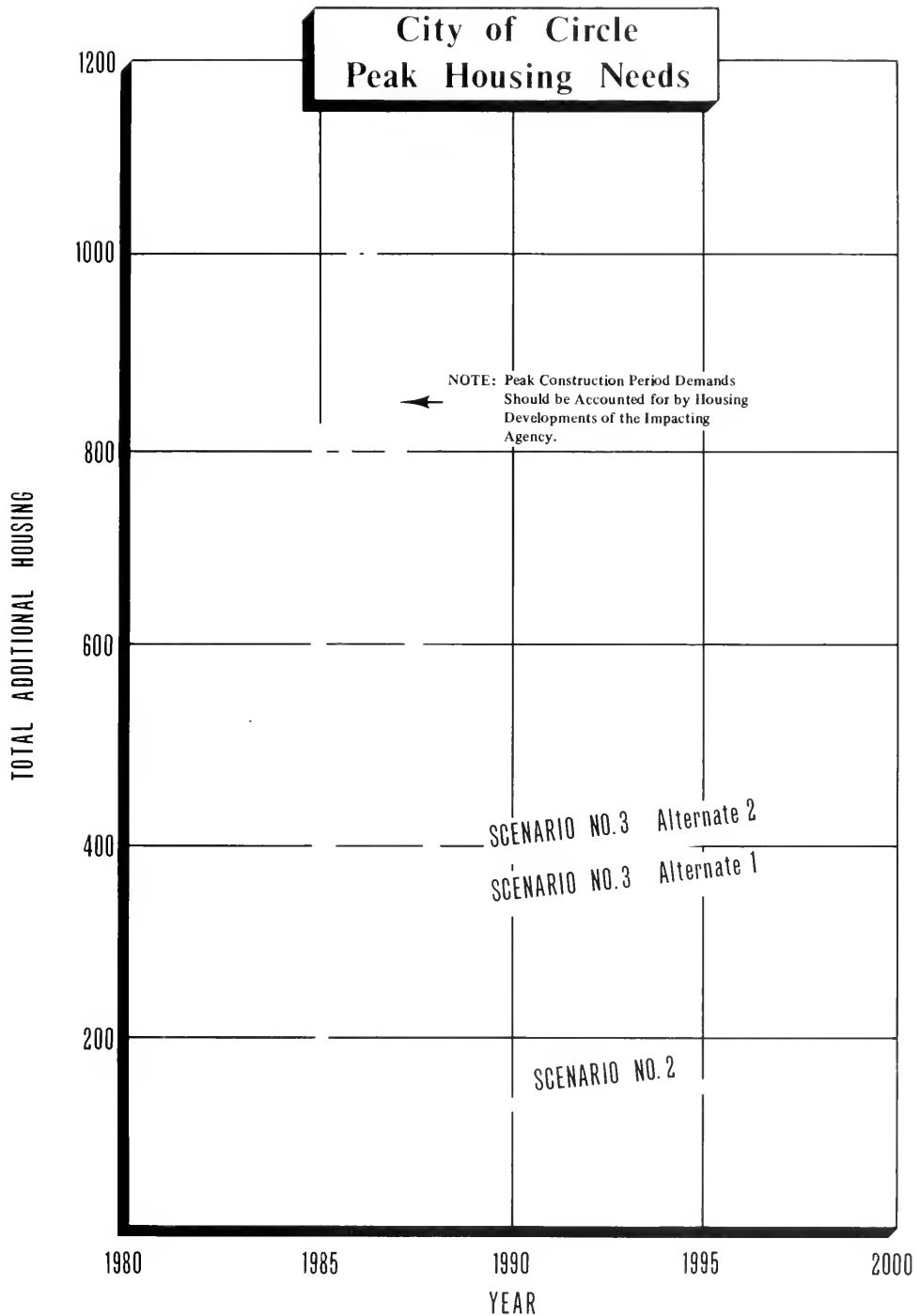


FIGURE 4



not constructed. As shown in Figure 4, Circle's share of the demand could run as high as 1100 new housing units for a one-year period under Scenario No. 3 - Alt. 1. Peaks reached during other coal development alternatives are also evident in the graph. Scenario No. 2 housing demand during construction would not exceed the need during the operational phase, therefore no true peak would be created.

The other area of the county that is expected to be impacted most as a result of coal development projects is the Town of Brockway. Population projections developed during the inventory and analysis phase of the study indicated that the county as a whole should increase in population slightly in the future; however, further analysis showed that virtually all of the growth will occur in the City of Circle. Therefore, we indicate a no-growth situation in Brockway for Scenario No. 1 through the planning period. The only major increase in population for the town will result from the proposed coal projects. Although no central sewer or water systems are presently available in Brockway, some rapid population growth will probably locate there because of the other community services already existing and because it is the closest population center to the mining area. The projections are shown in Table IV-5, below.

TABLE IV-5  
TOWN OF BROCKWAY  
POPULATION PROJECTIONS

Year	Development Scenario			
	1	2*	3*	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2 (Coal Gasification)
1978	75	—	—	—
1980	75	—	—	—
1981	75	144 (Constr.)	—	—
1982	75	144 (Constr.)	—	—
1983	75	156 (Begin Oper.)	—	—
1984	75	156	—	—
1985	75	156	218 (Constr.)	765
1986	75	156	1025 (Constr.)	765
1987	75	156	597 (Constr.)	765
1988	75	156	334 (Begin Oper.)	380
1989	75	156	334	380
1990	75	156	334	380
1995	75	156	334	380
2000	75	156	334	380

\*Estimates reflect both direct and indirect employment requirements.



The highest permanent population level anticipated (according to the growth alternatives evaluated) is 380 people at the time of the operating phase of the liquid ammonia or fuel grade methanol plant. Nearly as much growth is expected after construction of electric generating facilities (334), but the impact would be only about half that as a result of coal mine development. Nevertheless, even the growth associated with a small coal mine would be significant in a town the size of Brockway, since the population would double over existing conditions. Additional housing units needed to meet the demand of these projected population levels are indicated in the following table. More detail regarding type of housing is contained in Appendix B.

**TABLE IV-6**  
**TOWN OF BROCKWAY**  
**HOUSING REQUIREMENTS**  
(NO. OF ADDITIONAL YEAR-ROUND HOUSING UNITS)

Planning Period	Development Scenario			
	1	2	3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2* (Coal Gasification)
1978-1985	0	27	48	0
1985-2000	0	0	39	102
<b>TOTAL—</b>	<b>0</b>	<b>27</b>	<b>87</b>	<b>102</b>

\*For tabulation purposes, the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978-1985 planning period.

As previously mentioned, a minor amount of population growth generated by coal mining activities will be attracted to the Missouri River-Fort Peck area because of the obvious appeal of outdoor recreational opportunities. The probable distribution of the new housing units is not known. However, housing quantities were determined based on 10 percent of the total estimated impact. These figures are shown in Table IV-7. Additional housing data is provided in Appendix B.





TABLE IV-7  
MISSOURI RIVER — FORT PECK AREA  
HOUSING REQUIREMENTS  
(No. of Additional Year-Round Housing Units)

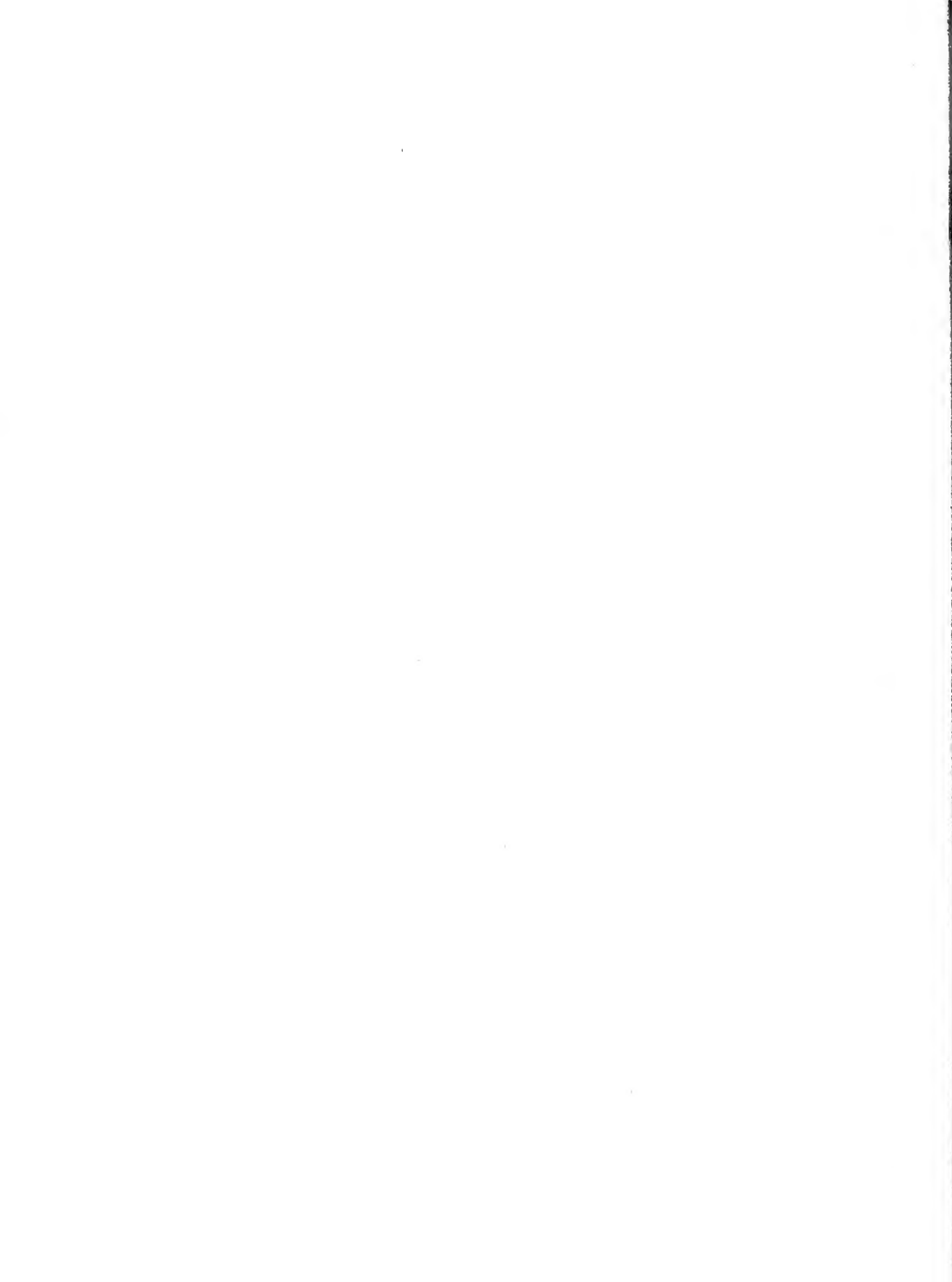
Planning Period	1	2	Development Scenario	
			3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2* (Coal Gasification)
1978-1985	0	14	24	0
1985-2000	0	0	20	51
TOTAL—	0	14	44	51

\*For tabulation purposes, the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978-1985 planning period.

#### 4. HOUSING ASSISTANCE PROGRAMS

Exploitation of coal resources in McCone County would create a significant impact on the housing sector. This sudden increase in housing demand in conjunction with continually rising interest rates and a generally tight money market points to a need for financial assistance to provide for the shelter needs of the future population. Obviously, this type of assistance cannot be provided at the local government level because the magnitude of the problem is simply too great to be noticeably improved through budget allotments originating from such a small population base. Typically, the federal government housing programs are the principal sources utilized to obtain necessary funds to upgrade the local housing market. In Montana, state assistance is also available for construction or purchase of new housing.

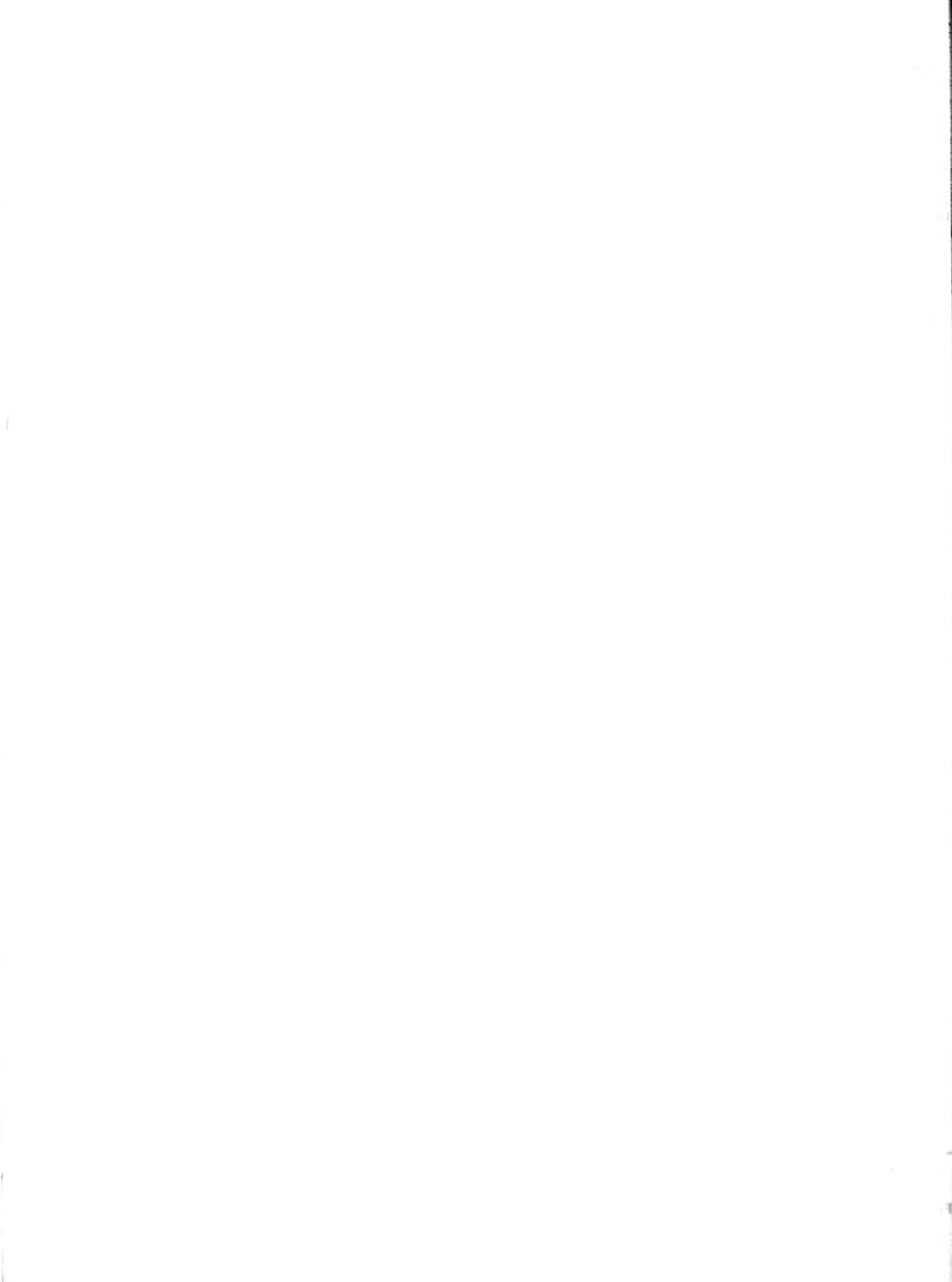
In order to promote equality in housing opportunities, it is necessary to consider the housing needs of various income levels and age groups. Consequently, most of the housing programs now available are intended to create these opportunities for those limited by incomes which are too low to provide decent, safe and sanitary housing for their families or for themselves because of their age. Some programs are also in effect which are intended to give the local



## FEDERAL HOUSING PROGRAMS

Fed. Dom. Assist. Catalog Number	Program <sup>1</sup>	Type of Assistance	Objectives
10.405	Farm Labor Housing Loans & Grants (FmHA)	Project Grants; Guar- anteed/Insured Loans	To provide decent, safe and sanitary low-rent hous- ing & related facilities for domestic farm laborers.
10.410	Low to Mod. Income Rural Housing Loans (FmHA)	Guaranteed/Insured Loans	To assist rural families to obtain decent, safe & san- itary dwellings and related facilities.
10.411	Rural Housing Site Loans (FmHA) Sections 523 and 524	Direct Loans; Guarant./ Ins. Loans	To assist public or private nonprofit organizations interested in providing sites for housing to acquire & develop land in rural areas to be subdivided as adequate building sites & sold on a nonprofit basis to families eligible for low- and moderate-income loans, cooperatives & broadly based nonprofit rural rental housing applicants.
10.415	Rural Rental Housing Loans (FmHA) Sections 515 and 521	Guarant./Ins. Loans	To provide economically designed & constructed rental & cooperative housing & related facilities suited for independent living for rural residents.
10.417	Very Low Income Housing Repair (FmHA) Section 504	Direct Loans Project Grants	To give very low income rural homeowners an op- portunity to make essential minor repairs to their homes to make them safe & remove health hazards to the family or the community.
10.420	Rural Self-Help Housing Tech- nical Assistance (FmHA) Section 523 Tech. Assist.	Project Grants	To provide financial support for the promotion of a program of technical & supervisory assistance which will aid needy low-income individuals & their families in carrying out mutual self-help ef- forts in rural areas.
10.427	Rural Rental Assistance Payments (FmHA) Section 521	Direct Payments for Specified Use	To reduce the rents paid by low-income families occupying eligible Rural Rental Housing (RRH) Rural Cooperative Housing (RCH) and Farm Labor Housing (LH) projects financed by the Farmers Home Administration through its Sections 515, 514 and 516 loans and grants
10.429	Above Moderate Income Housing loans (FmHA)	Guaranteed/Ins. Loans	To assist above-moderate income families in ob- taining adequate but modest, decent, safe & san- itary dwellings & related facilities of their own use in rural areas by guaranteeing sound rural housing loans when loans would not be made available without a guarantee.

<sup>1</sup> FmHA is Farmers Home Administration; HUD is Department of Housing and Urban Development.







## STATE HOUSING PROGRAMS

Program Description	Type of Assistance	Objectives
Low Interest Bond Program - Through the sale of bonds on an as-needed basis, the State Board of Housing makes money available for housing loans by local lending institutions. The money is loaned at a low interest rate (generally two or three points below market rates.)	Direct Loans to Qualified Persons	To provide economically designed and constructed housing for moderate income families.
Lower Income Housing Assistance Program - Section 8: This is a federally funded program administered by the State of Montana. It is used primarily to provide additional multi-family units for qualified low-income persons.	Direct Payments for specified use	To aid lower income families in obtaining decent, safe & sanitary housing in private accommodations & to promote economically mixed, existing, newly constructed & substantially rehabilitated housing.





An illustration showing two wheat stalks with grain heads rising from behind a barbed wire fence. The fence is made of three strands of barbed wire supported by wooden posts. The area behind the fence is filled with diagonal hatching lines. The entire scene is set against a plain white background.

## **CHAPTER V**

# **COMMUNITY FACILITIES PLAN**



## CHAPTER V

### COMMUNITY FACILITIES PLAN

#### 1. GENERAL

Many community facilities are specifically designed to serve only the common needs of persons residing in or near population centers. However, some services, such as Health Care, Fire Protection and Law Enforcement, are extended to include a broader service area (frequently coincidental with county jurisdiction) in response to the demands of the rural population. Consequently, plans for future growth must address the anticipated public needs of the entire county while recognizing maximum service requirements created in each community. In McCone County, the communities of Circle and Brockway are expected to receive the brunt of any population growth and will require close scrutiny regarding necessary public improvements. This chapter is designed as an aid to government officials in anticipating community facility improvements both at the local and county levels. The format for analysis has been grouped into the following categories:

EDUCATION - public schools

GOVERNMENT FACILITIES AND SERVICES - cultural facilities, administrative facilities, law enforcement, fire protection, health care

UTILITIES - sewer, water, solid waste

PARKS AND RECREATION - park and recreation facilities

#### 2. EDUCATION

The basic purpose of the school inventory is to determine how much impact and enrollment growth McCone County schools can absorb before expansion becomes necessary. The capacity analysis in the inventory report showed that all schools in the county are adequately sized for the existing situation. However, those schools expected to absorb the coal impact population will become overcrowded and new construction will be necessary when either of the two largest coal development alternatives are implemented (see Chapter II for a description of coal development proposals which were evaluated).

For the purposes of evaluation and in order to emphasize timely construction planning, school enrollments have been projected for each development alternative through the year 2000. The short-range planning period (1978-1985) may present an enrollment problem at Circle Elementary during Scenario No. 2, and surely will present a problem at both elementary schools if the first alternate of Scenario No. 3 is implemented in 1985. However, looking at the long-range picture (1985-2000) we see that affected elementary schools are no longer adequately sized for either of the Scenario No. 3 populations. Standards indicate that the high school should handle any anticipated enrollment increases, but school officials feel this is not the case and overcrowding would occur before 100 additional students enrolled at the school (see Table V-1).



Projected long-term and peak (construction) school requirements for the county are shown in Appendix B of this report. Permanent requirements for impacted schools are summarized in the following table as they relate to facility increase capacity.

**TABLE V-1**  
**McCONE COUNTY**  
**ESTIMATED ADDITIONAL ENROLLMENT**  
**Vs SCHOOL INCREASE CAPACITY**

SCHOOL*	Increase Capacity (Allowable Levels According To State Standards)	DEVELOPMENT ALTERNATIVE**		
		Scenario No. 2	Scenario No. 3 - Alt. 1	Scenario No. 3 - Alt. 2
<u>Brockway Elementary</u>				
1978-1985	-	14	24	1
1985-2000	-	3	22	53
TOTAL -	21	17	46	54
<u>Circle Elementary</u>				
1978-1985	-	50	85	4
1985-2000	-	10	76	185
TOTAL -	74 ***	60	161	189
<u>Circle High School</u>				
1978-1985	-	34	59	3
1985-2000	-	7	53	128
TOTAL -	192***	41	112	145

\* It is assumed that 10 percent of the total estimated increased enrollment would be distributed outside of the county.

\*\* Impact on schools during normal growth (Scenario No. 1) should be minimal through the long-range planning period.

\*\*\* According to the Circle School Superintendent, the Circle Elementary Schools could handle 42 more students and Circle High would be overcrowded with about 100 additional students.



The Brockway and Circle elementary schools will have to be expanded at the beginning of the Scenario No. 3 alternates (1985-1986) and should be made large enough to accomodate the total enrollment increases shown in the preceding table. The table shows that the greatest long-term impact will take place during Scenario No. 3 - Alternate 2 when the year 2000 school population will increase by 54 students at Brockway Elementary and 189 students at Circle Elementary. This compares to an increase capacity of 21 and 74 students, respectively. Therefore, one additional classroom will be needed in Brockway and five should be added in Circle.

The future capacity analysis shows that Circle High School has an existing increase capacity which exceeds the demand created by the largest coal development impact. There is a general consensus, however, that the increase capacity shown for the school is not realistic and should be re-evaluated before 1985.

Decisions for methods of school expansion should be made prior to 1985 by local school and public officials (provided that either of the large coal development proposals appear to be imminent). Land for expansion is not a problem in Brockway, but requires close consideration in Circle. Refer to Chapter VII - Land Use Plan for general recommendations.

Construction period school requirements for Scenario No. 3 will be much higher than permanent needs shown in Table V-1, creating a maximum total impact of about 1000 additional students. This demand must be accounted for by impacting agencies and indicated in the Environmental Impact Statement submitted by them prior to construction. It is anticipated that part of the increase would be distributed outside of the county, especially if prefabricating techniques are used. In this case the prefabrication site would incur the brunt of the temporary impact.

### 3. GOVERNMENT FACILITIES AND SERVICES

#### A. Cultural Facilities

##### MUSEUM

The colorful origins of Circle and McCone County should be a source of interest and pride for every resident. Properly displayed, the artifacts and memorabilia of the past can stimulate pride and provide a needed educational function. Recognizing the importance of this function, the people of Circle have managed to preserve much of the local heritage through the operation of a small part-time museum.

Currently, the McCone County Museum is located in an old building on the corner of Third Avenue and Main Street and houses displays of prehistoric and Indian





artifacts as well as many homestead relics. Hours of operation for the summer are from 2:00 to 5:00 p.m. Tuesday through Saturday. Visits are possible at other times by appointment only.

Sometime in 1980 the museum will be moved to a new building on the southwest edge of town near Highway 200. The metal structure (built with Revenue Sharing Funds) will provide additional display and circulation space and will help to make cultural heritage more visible to the local citizenry and those passing through the city.

Present operations include money and time donated by the Pioneer Historical Circle and some help from the county on utility and cleaning bills. Because of the obvious lack of funds and in order to heighten public interest in historical events and promote education in the various fields of art, it is recommended that the Museum Improvement Program be continued through the procurement of grant monies as they become available. The Capital Improvements Program lists some of these sources.

### LIBRARY

The public library's contribution to a healthy community is manifold. It provides an essential information resource for community education and encourages development of an informed citizenry. The library acts not only to stimulate thought, clarify opinion and supply information, but also to provide entertainment, even to those in the remote parts of the area served. The McCone County Library, though deficient by ideal standards in some respects, has performed its function well for many years.

The V.S.C. (Volume, Seating and Circulation) formula is used for evaluating the McCone County Library. It is a general guide, but has proven to be realistic. Table V-2 shows existing and projected library needs based upon population forecasts.

The table shows that the total number of volumes on hand in the library is adequate to serve the needs of the population through the planning period for the first two development scenarios, but during maximum impact alternatives more books should be added. Also, it is evident that the seating capacity is presently below recommended minimum standards as is the first floor area of the building. Consequently, plans for an addition should be considered at least before 1985 when population growth increases significantly.



TABLE V-2  
McCONE COUNTY

EXISTING AND PROJECTED  
LIBRARY NEEDS  
(YEAR 2000)

Development Scenario	Population	Volumes		Seats		Circulation		First Floor Area	
		No.	Books/ Capita	No.	Chairs/ 1000 Capita	No.	Volumes/ Capita	Sq. Ft.	Sq. Ft./ Capita
1	3,505	14,020	4	35	10	35,050	10	1,753	.5
2	3,921	15,684	4	39	10	39,210	10	1,961	.5
3 Alt. 1	4,825	19,300	4	43	10	48,250	10	2,413	.5
3 Alt. 2	5,057	20,228	4	50	10	50,570	10	2,529	.5
EXISTING	3,403	15,462	4.5	27	8	10,408	3.1	1,050	.31
V.S.C.	Under 10,000		3.5-5.5		10		10		.5 - .7

B. Administrative Facilities

City and county government operations are centered in the City of Circle in two buildings, each of which is located near the core of the city's activity. As indicated in the inventory phase report, the McCone County Courthouse and the City-County Building (also referred to as the John Vejtasa Building) are in good condition and provide more than adequate space for the needs of the existing population.

Since most of the rapid growth generated by coal development impact would be expected to occur in Circle (70 percent of the total increase), it is logical to assume that the city's administrative responsibilities would increase proportionately. Therefore, it is evident that, whereas the additional county paperwork and personnel requirements could conceivably be absorbed within the framework of the existing building, new construction would be required to accommodate city government personnel at the time of the implementation of either of the Scenario No. 3 coal development alternatives.



The existing offices in the courthouse generally have a need for more efficient space use. There is a lack of filing and storage space in some of the offices, resulting in a slightly overcrowded appearance. However, there is some unused space on the basement floor, and if the other floors were reorganized through a remodeling/relocation project, future needs could be met within the existing building. This statement is certainly true for the first two development scenarios considered in this report. However, some doubt exists concerning space requirements should the maximum coal development scenario be implemented. Precise space needs can be effectively evaluated only after the preparation of detailed renovation plans showing the new office layout and document storage areas. If it is determined that additional building space is needed at that time, then it is recommended that land behind the courthouse be used for this purpose.

The government offices located in the new City-County Building should also be adequate for normal growth conditions as shown in the baseline projections and in the Scenario No. 2 projections of the city population. However, principally because of the expansion needs of the law enforcement offices and because other offices will require some staff increases, it is apparent that more building space will be needed in the future if a coal electric generator or a fuel grade methanol plant is constructed in the county. Either of these alternates would cause a local permanent impact of roughly twice the existing population of Circle (moving from 1,270 in 1978 to approximately 2,400-2,500 people by the year 2000) and could result in a short-term construction impact of about three times the present population. Although reliable criteria are not available for determining future floor space requirements for government offices, it is obvious that land for office expansion should be planned for. The land use plan map for Circle shows the general area most desirable for expansion. This location would include the probability of construction on the southwest side of the City-County Building and new office space provided in the garage facility to be constructed in the near future. Also, it may be feasible to purchase office space from the Soil Conservation Services if relocation becomes a reality for them in the future. It is important to note that parking must be provided in conjunction with the expansion. If the parking space near the corner of First Avenue and Montana Street is converted to building area, then parking must be provided somewhere else in the vicinity, possibly on the vacant lot at the corner of Highway 200 and Idaho Street.

#### C. Law Enforcement

Under the recently consolidated system of the police and sheriff's departments,



operations have been simplified and are reportedly working satisfactorily. However, even at the present population level, it is impossible to provide good coverage of the county because of personnel limitations. There are some periods when no patrolmen are on duty, resulting in a time lag during emergency situations. This is a major deficiency and should be corrected through the addition of at least one patrolman as soon as possible. It is obvious that budget conditions will not improve significantly until some development (in addition to normal growth as shown in baseline projections) occurs within the county. Therefore, until such time as rapid growth generates increased budget allotments, outside help should be sought for needed law enforcement money. Some of these possibilities are discussed in the Capital Improvements Program Report.

Building space requirements are adequate for existing operations, but an addition should be made in the future to include jail facilities. The necessity of this facility has been recognized for some time and, undoubtedly, expansion to provide jail space will become a matter of urgency during times of rapid population growth. In addition to a city-county jail, more office space will be required when the population increases to the high permanent levels indicated in the Scenario No. 3 alternates (an increase of 1,400 to 1,600 people in the county by the turn of the century). It is not anticipated that more office space for law enforcement staff will be necessary at the time of the small coal mine development.

It is recommended that new space requirements be accommodated through reorganization of and/or annexation to the City-County Building. This could be accomplished in several different ways. Three possibilities are: 1) construct an annex on the southwest side of the existing building, leaving all garage space intact in the rear of the building; 2) convert some of the garage area to office and jail space and construct a larger garage facility at the old city office site across from the Vets Club.\* This option would not eliminate needed parking spaces on the southwest side of the existing building; 3) determine the feasibility of utilizing the present Soil Conservation Service office building for city offices and add the jail facility in the rear of the existing building. A detailed evaluation of space requirements should be performed prior to the operational phase of Scenario No. 3 coal development projects.

\*A new garage with office space is scheduled for construction at this location in 1980. However, no concrete plans have been made for provision of jail space.





D. Fire Protection

Fire fighting facilities are summarized in the inventory and analysis report and, as indicated there, have proven to be adequate for the needs of the existing population. The garage facilities for storage of fire fighting equipment in Brockway, Circle and the north county area are adequate for existing and projected population levels under all development scenarios. However, some of the fire fighting equipment will have to be replaced during the long-range planning period (1985-2000) since most of the trucks and other large equipment items are quite old (refer to the fire protection section in the inventory and analysis report). New equipment needs and possible funding methods are addressed in the Capital Improvements Program report.

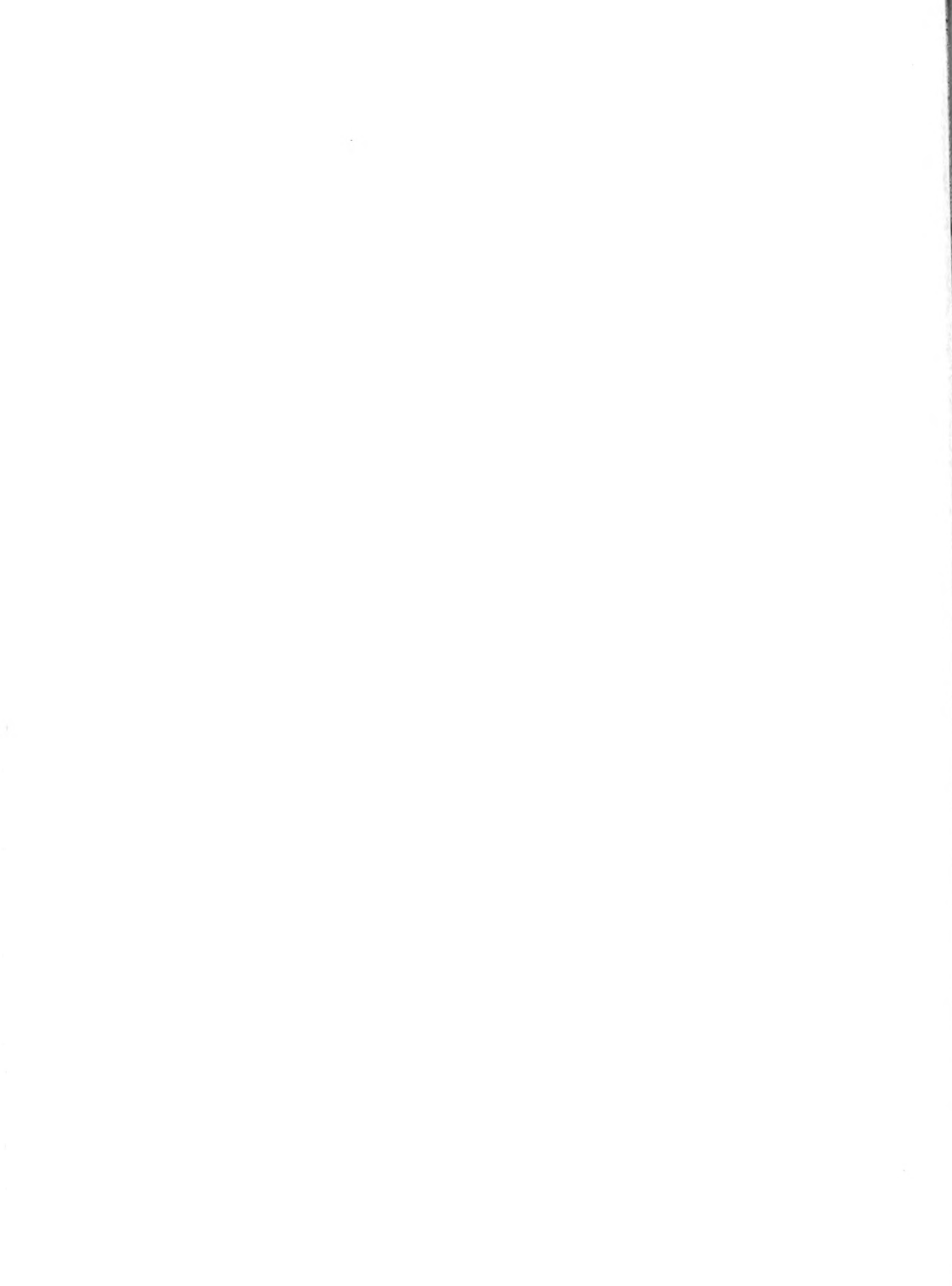
E. Health Care

Existing health care facilities in McCone County consist of two structures located in Circle. The present operations of the McCone County Hospital and McConha Nursing Home are described in the inventory and analysis report and, as indicated there, both facilities have been experiencing low patient loads in recent years. This situation has resulted in financial and management problems which are currently being evaluated. The hospital and nursing home took action early in 1979 to help alleviate the situation by utilizing the services of a joint administrator. However, low occupancy rates for both units continue to be a problem and will probably remain so through the year 2000 under normal growth conditions. Without more out-of-county occupants, it appears that the nursing home will not reach its patient load capacity by the year 2000 even if a coal gasification plant (as described in the second alternate of Scenario No. 3) were constructed. The projected bed needs of each facility for the planning period through the turn of the century are shown in Table V-3 and V-4.

TABLE V-3  
McCONE COUNTY  
SHORT TERM CARE NEEDS\*  
(YEAR 2000)

Development Scenario	Population	Use Rate	Projected ADC	Bed Need
No. 1	3,505	966	9	20
No. 2	3,921	966	10	22
No. 3 Alt. 1	4,825	966	13	25
No. 3 Alt. 2	5,057	966	14	26

\*Existing capacity of McCone County Hospital is 20 beds.



The determination formula used by the Montana State Department of Health is established by the U. S. Department of Health, Education and Welfare as follows:

- 1) Multiply current use rate (annual patient days per 1000 population) by projected area population and divide by 365 to obtain the projected average daily census (ADC).
- 2) Divide the projected ADC by .85 (occupancy factor) and add 10 to obtain the number of beds for an area.

Table V-4 indicates that the need for expanding the county hospital is not urgent since the normal demand for beds will not exceed supply until shortly after the year 2000. Bed needs created under the second development scenario will necessitate expansion much sooner; in fact, there will be a need for one more bed at the beginning of construction of the coal mine, and two additional beds by the year 2000. During the implementation of either of the Scenario No. 3 alternates the prospect for hospital expansion becomes more justifiable as we show a need for five or six additional beds in the short term care facility. It should be noted that peak construction population during the third scenario would create a need for as many as 17 new hospital beds, but the high demand would be short-lived and long-term solutions would be unnecessary.

The need for long-term patient care is amply provided for in the county nursing home (McConha), which has facilities to care for 40 residents. As shown in the following table, the bed demand will not exceed existing supply for any of the development alternates.

**TABLE V-4**  
**McCONE COUNTY**  
**LONG TERM CARE NEEDS\***  
**(YEAR 2000)**

Development Scenario	Population 65 and Over	No. Patients Per 1000 Population	Projected ADC	Bed Need
No. 1	350	.05	17	28
No. 2	392	.05	20	31
No. 3 Alt. 1	483	.05	24	35
No. 3 Alt. 2	506	.05	25	37

\*Existing Capacity of McConha Nursing Home is 40 beds.



The determination formula used by the Montana State Department of Health is established by the U. S. Department of Health, Education and Welfare as follows:

- 1) Multiply current use rate (annual patient days per 1000 population) by projected area population and divide by 365 to obtain the projected average daily census (ADC).
- 2) Divide the projected ADC by .85 (occupancy factor) and add 10 to obtain the number of beds for an area.

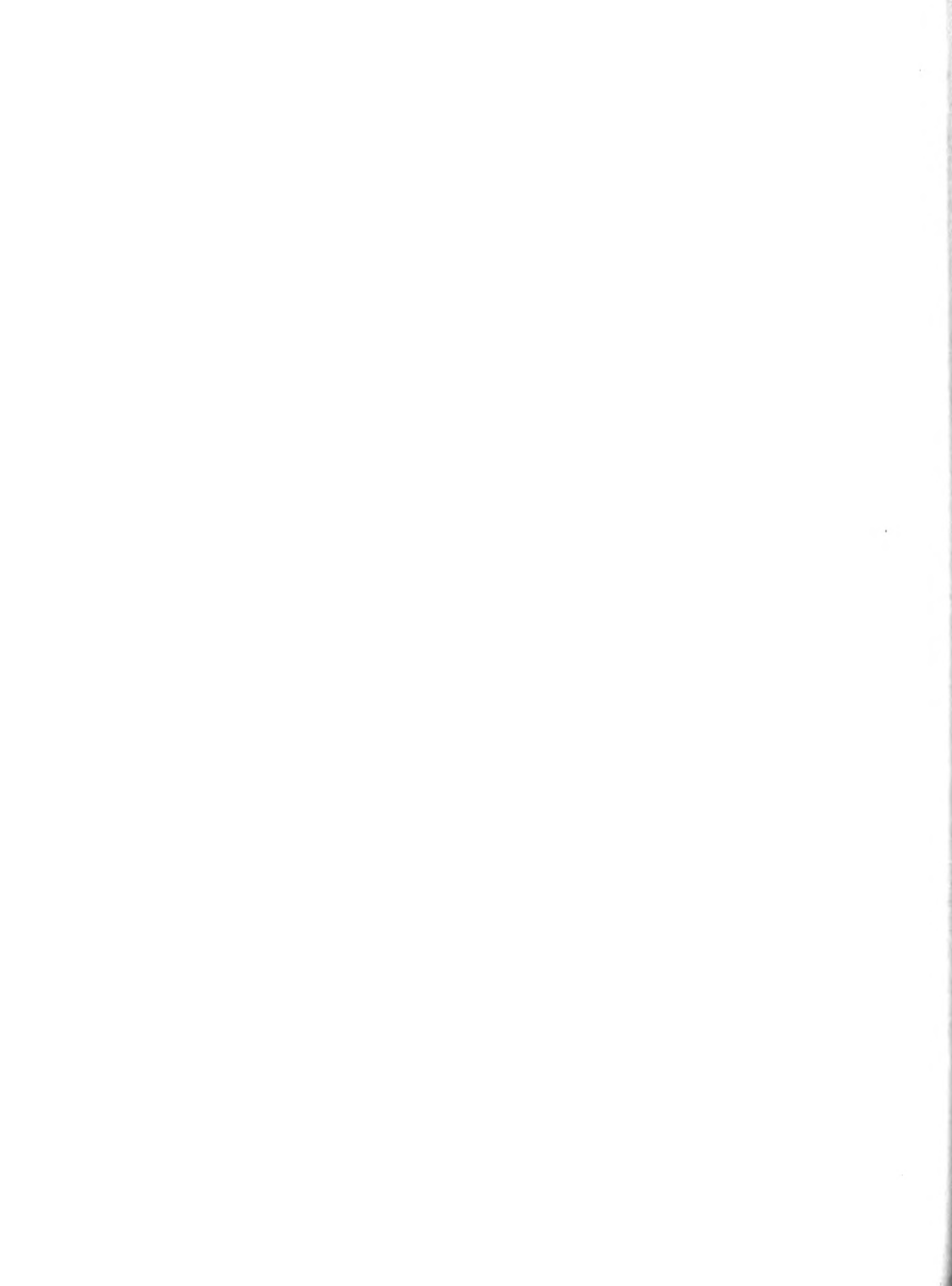
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#### 4. PARKS AND RECREATION

The existing park facilities of McCone County are essentially limited to those which are provided in Circle. All of the recreational equipment and open park space is concentrated in the park area at the southeast edge of the city. The 55 acre park\* is classified as a community park and as such would exceed recommended park standards for the population served. Planning design standards show that a community park should provide approximately 50 acres for this type of facility when it is structured as a park-school community area. Therefore, with the exception of equipment maintenance and replacement, no additional improvements are needed in the park annex area through the planning period (1978-2000).

Recognizing the increased recreational demand in the Circle and Brockway areas during major coal development projects (Scenario No. 3), and in compliance with the wishes of McCone County residents as indicated in the planning questionnaire, more parkland has been recommended for future development in both towns. Proposed parkland locations are shown on the land use plan maps in Chapter VII of this report.

Three areas that have potential for new park-play area development are delineated on the banks of Horse Creek and are intended to provide for the needs of existing and future populations in the Circle area. The principal advantage of a park in any of these locations is that it will provide developed recreation opportunities for those living on the north side of Circle and will make use of otherwise undevelopable land. Site 1 is located on the west side of the Wolf Point Highway immediately north of the Travelers' Inn. It is over two acres in size and is presently in the planning stage for types of facilities to be provided. The location of Sites 2 and 3 as shown on the Land Use Plan Map is only preliminary and is presented as part of the plan in order to emphasize the need for parkland expansion in conjunction with residential growth which could occur in the future. Although the sites are suggested only, their consideration in the plan is important in that future neighborhood recreational opportunities should be developed in these approximate areas. The parks could serve parts of the existing population as well as any growth anticipated for the north and west ends of Circle (residential development is expected to occur in these areas). Site 3 is the preferential site in terms of locational requirements, and would contain approximately 4.5 acres as shown. The area encompassed by Site 2 is about 4 acres. The development of either one of these sites in addition to the area near Highway 13 (Site 1) and parkland reserved for Ben Larson Park would satisfy future demand in the Circle area.

\*Includes football field area outside the city limits.





Only one park area is presently provided in the town of Brockway and, because of the low existing population level (75) and only slightly higher levels projected under Scenario No. 2 (156 by the year 2000), it is not anticipated that additional park facilities will be feasible until the larger population influx forecasted during Scenario No. 3. Two park areas are shown on the Land Use Plan Map. The site near the center of town should be developed as a neighborhood park providing picnic and playground facilities.<sup>1</sup> The remainder of its space should be devoted to circulation, landscaping and buffer zones. Total area of the park is about 35,000 square feet (.8 acre). The other major park development is shown on the edge of Ash Creek on the south-east edge of town. It is a relatively large parcel (approximately 7 acres) and is intended principally as an improved open-space natural area for the citizens in and around Brockway. The intent of the plan is that most of the area be left open with scattered landscaped picnic areas; however, there is ample space for development of a small baseball diamond should the need become apparent in the future. The siting of this type of facility would be critical here because of its proximity to the flood plain and variations in topography.

The area recommended for park-related improvements located near the Burlington Northern tracks at the main entrance to town is suggested as a means of upgrading the town identification. If some landscaping and signing were judiciously provided at this location, the image of Brockway would improve with its growth. It is recognized that the improvement is subject to the approval of the railroad company and would require their cooperation for development.

Local subdivision regulations require that a portion of newly subdivided land be set aside for parkland development. However, if it is determined that the community could be better served through further improvement of existing parks, then cash for the park fund can be accepted to satisfy the requirement. It is recommended that subdivision plats be closely examined to determine whether or not additional land area is really needed. In any event, parkland development in areas shown on the maps should be encouraged.

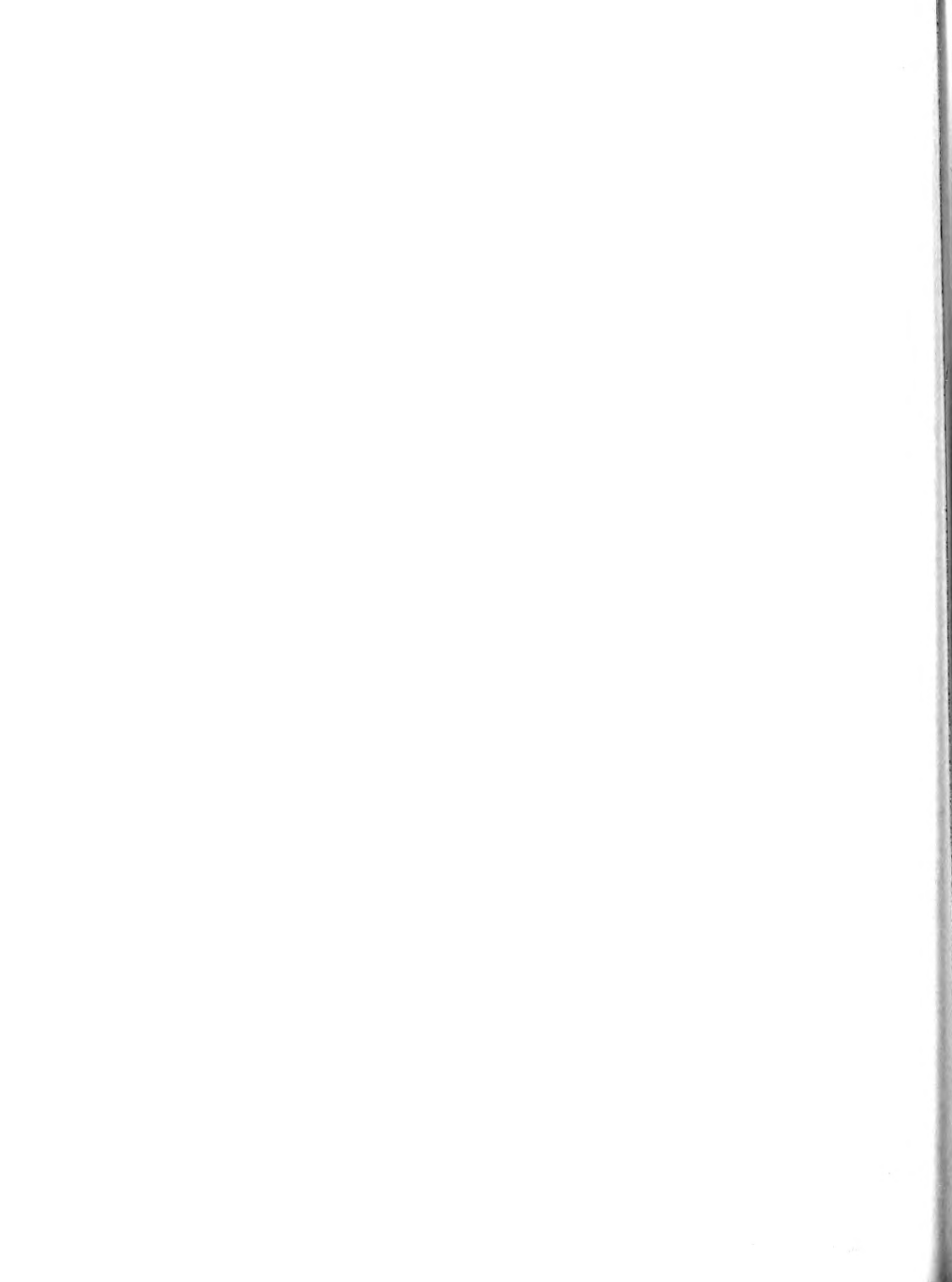
## 5. UTILITIES

### A. Sewer Systems

The present state and federal wastewater discharge regulations require that all sewage must be discharged such that no surface or ground water and water supplies are polluted. The current regulations also state that where central sewer systems are determined necessary, secondary treatment or its equivalent is required.

Currently, the only central sewage collection and treatment system in the county is located in Circle. The remainder of the residents in the county utilize individual

<sup>1</sup>This park is being developed by the local Jaycees, but only minimal facilities have been provided to date.



septic tanks and drain field systems for treatment of their domestic sewage. As previously discussed, water quality tests have indicated no apparent contamination of water supplies from septic tank systems in the county. Therefore, it is anticipated that the continued use of septic tanks will provide adequate sewage treatment and disposal for the rural areas of the county in the future.

For Circle and Brockway, an analysis was conducted which evaluated the adequacy of the existing sewage collection and treatment systems to handle the current and projected flows. The analysis also evaluated the potential impact the Circle West projects would have on each area's sewage system. The details of this analysis are presented in the Inventory and Analysis Report.

A summary of conclusions listed are as follows:

1) CITY OF CIRCLE\*

- ☐ The existing collection system is in fair to good condition.
- ☐ The two-cell stabilization pond system is capable of serving approximately 1,600 people.
- ☐ When the population exceeds 1,600, improvements to the treatment plant will be required.
- ☐ When the population exceeds 2,000, a new 12" outfall line will be necessary.
- ☐ Recommended improvements to the lagoon would include lining and increasing the depth and installing a forced aeration system.
- ☐ Cost to upgrade the system to serve 4,000 people would be approximately \$470,000. This represents a \$4.13 per month increase per customer over existing rates. If the population doubled (to over 2,000 people) the rate increase would be only \$1.18 per month over existing rates.

2) TOWN OF BROCKWAY

- ☐ There is no existing central sewage collection and treatment facility.
- ☐ A treatment plant should be constructed if the population level increases to over 300 people (depending on test results for bacteriological pollution).
- ☐ An aerated pond treatment facility would be the recommended system.
- ☐ Total project cost would be approximately \$243,000 to serve a maximum population of 500. Cost per service at maximum design population level would be \$6 per service per month.

\* Reference Sewer System Facility Plan; Morrison-Maierle, Inc.



Although the analysis for Circle shows that the capacity of the system is adequate to handle a population increase of about 330 people (up to 1600 persons), it also indicates that the present wastewater system is not providing sufficient treatment to meet current discharge standards. Thus, since some improvements are already necessary, it would be logical to make the recommended changes sufficient to accommodate the needs of the Scenario No. 3 population for Circle (over 2,500 by the year 2000). Therefore, both the lagoon and outfall improvements should be made prior to the time of maximum permanent impact.

The situation in Brockway is not critical at the present time, nor would it be if Scenario No. 2 were implemented. However, it is recommended that if the population level increases substantially (over 300), a central sewer system should be seriously considered.

Circle's sewer system is shown on the following page (Figure 5), and depicts the system as it exists in 1979. Proposed major improvements within the planning period are also shown.

The proposed sewer system improvements for Brockway are shown in Chapter Seven of the Inventory and Analysis Report.

## B. Water Systems

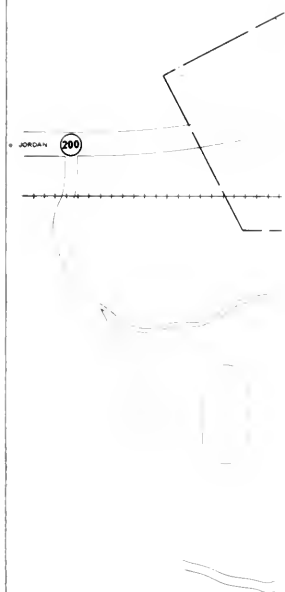
Residents of Circle are currently the only people in the county with a central water supply system. The remainder of the county residents (one-half of total county population) primarily utilize individual wells for their water supply. There are also a small number of residents in the county (less than 10 percent) who utilize other water supply sources such as hauling water from nearby potable water sources or the direct use of lakes, rivers or streams.

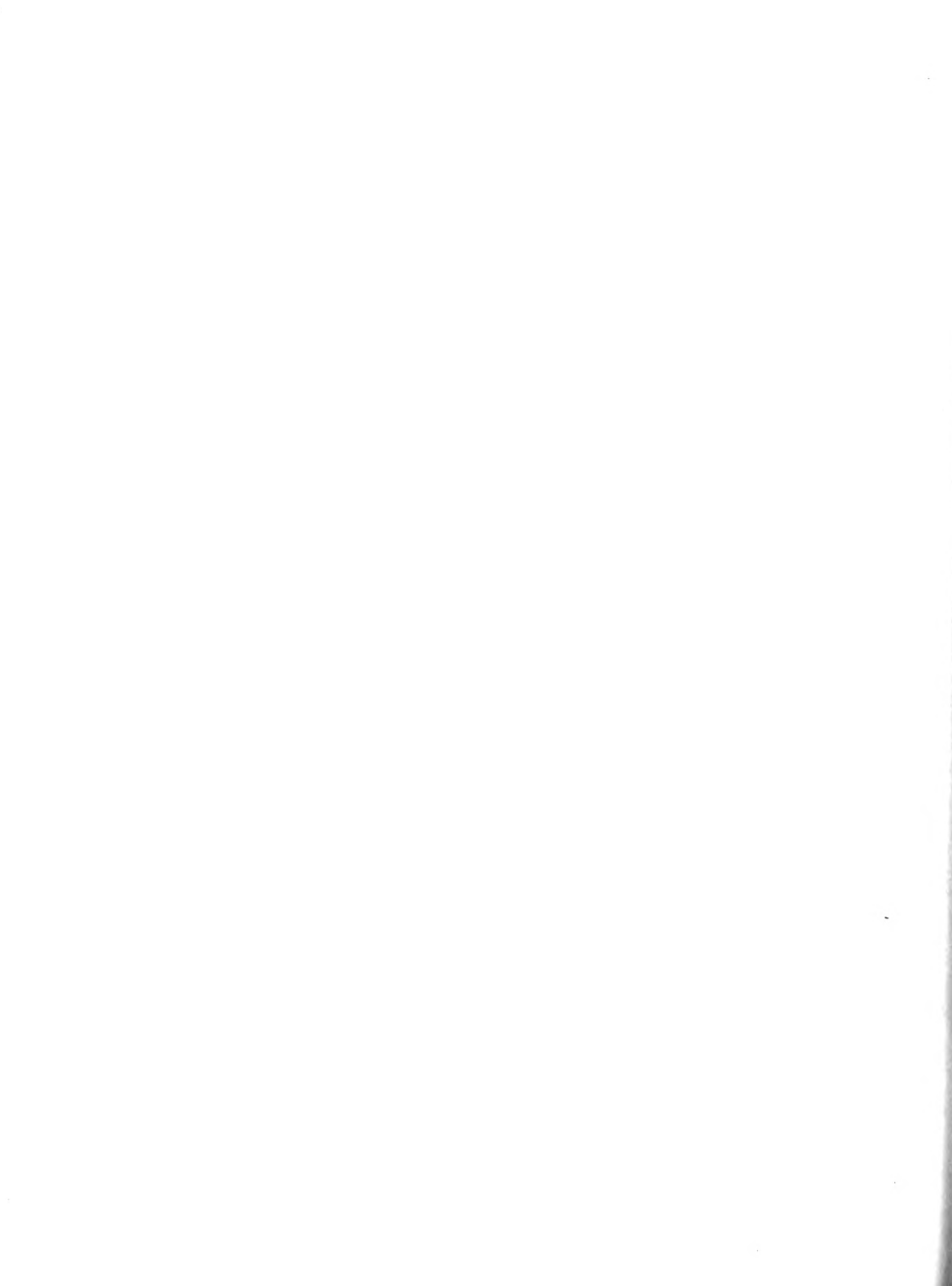
The current water supply systems for Circle and Brockway were analyzed to determine the potential of each system to meet the future needs of residents. The results of the preliminary analysis are shown in the Inventory and Analysis Report. A summary of these conclusions and an updated analysis is presented in the following list:

### 1) CITY OF CIRCLE

- ☐ The existing distribution system is sufficient to meet the demand of the 1979 population. Some of the 4 and 6 inch lines would have to be

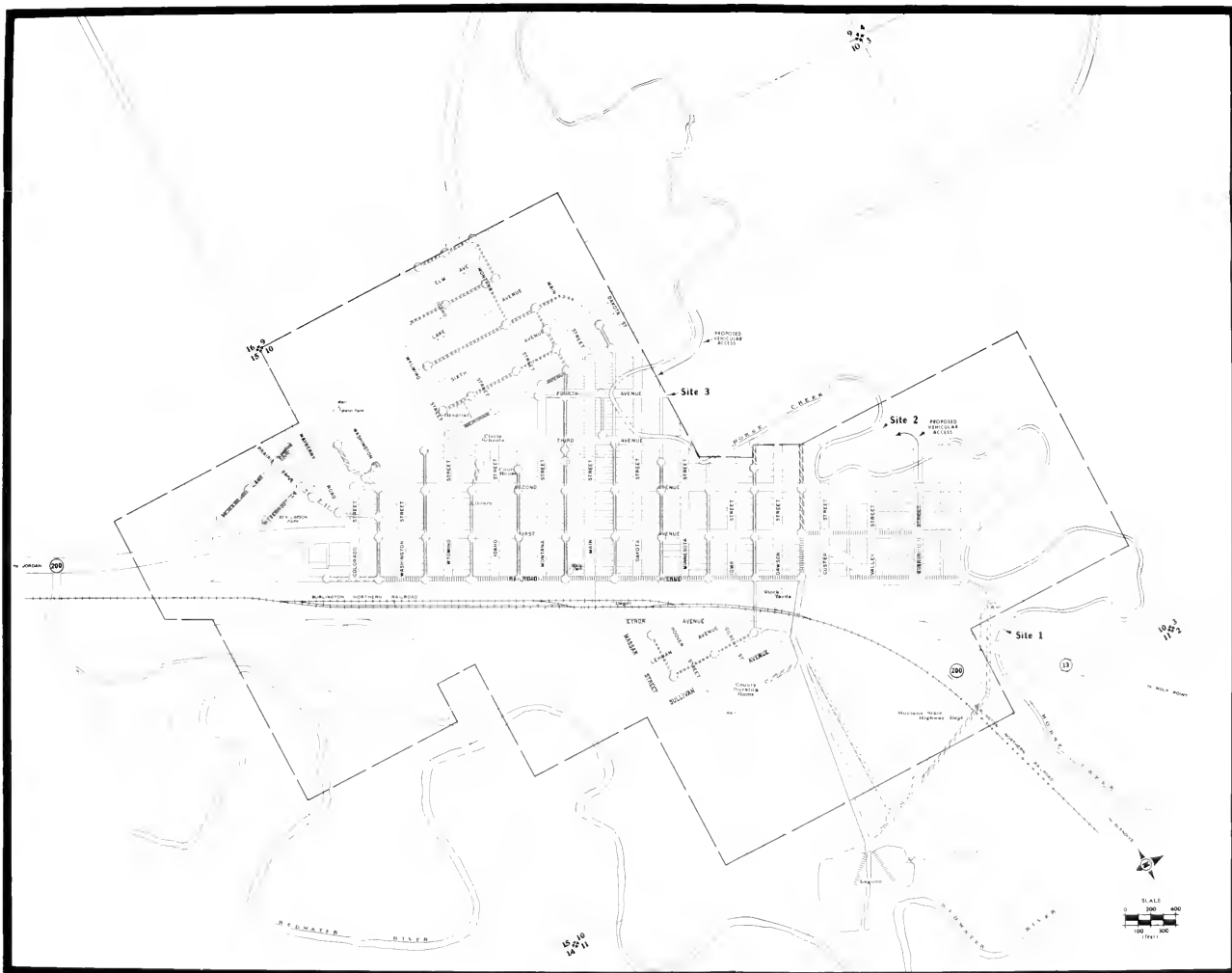








# CITY OF CIRCLE



## McCone County Comprehensive Planning Program Sanitary Sewer System

- 6" VITRIFIED CLAY
- 8" VITRIFIED CLAY
- 10" VITRIFIED CLAY
- 6" ASBESTOS CEMENT
- 10" ASBESTOS CEMENT
- 8" PVC



replaced with 8 inch lines if a significant increase in demand occurs.

- ☐ Combined storage and supply capacity of the existing system exceeds demand by 153,000 gallons. The capacity of the system is sufficient to supply a population of 1,780 people.
- ☐ If the population reaches 2,549 (maximum level during Scenario No. 3), an additional 230,700 gallon demand would be created.
- ☐ The maximum future demand (Scenario No. 3) could be met by installing a 160 gpm well and pump or by adding 230,000 gallons of storage.
- ☐ It is normal practice to have a review prior to installation of new distribution mains and water services during the subdivision process. No cost should be incurred by the town of Circle, and consequently no estimate for additional distribution mains has been prepared.

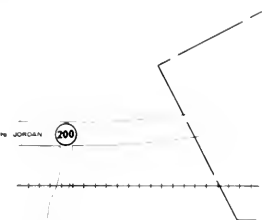
## 2) TOWN OF BROCKWAY

- ☐ There is no existing water distribution system in Brockway and one will not be needed through Scenario No. 2 conditions.
- ☐ Recent water quality tests from Brockway wells have not indicated any significant bacteriological pollution.
- ☐ Soils tests indicate moderate effectiveness for septic tank absorption fields, therefore a substantial increase in population would necessitate a central sewer and/or water supply system.
- ☐ If a central sewage system were constructed to service Scenario No. 3 population influx, it is questionable whether a central water system would also be needed.
- ☐ If it is determined that a permanent water system is needed, then the demand of the maximum population level (380) could be satisfied with a water storage capacity of 100,000 gallons and two wells producing 50 gallons per minute.

As previously mentioned, the water distribution and supply system in Circle is sufficient to serve a population of 1,780 people. This means that no major supply or storage additions will have to be made through the year 2000 under growth conditions created by Scenario No. 2 (small coal mine development). However, during the period of more significant growth (Scenario No. 3), the improvements mentioned in the previous summary will have to be made.

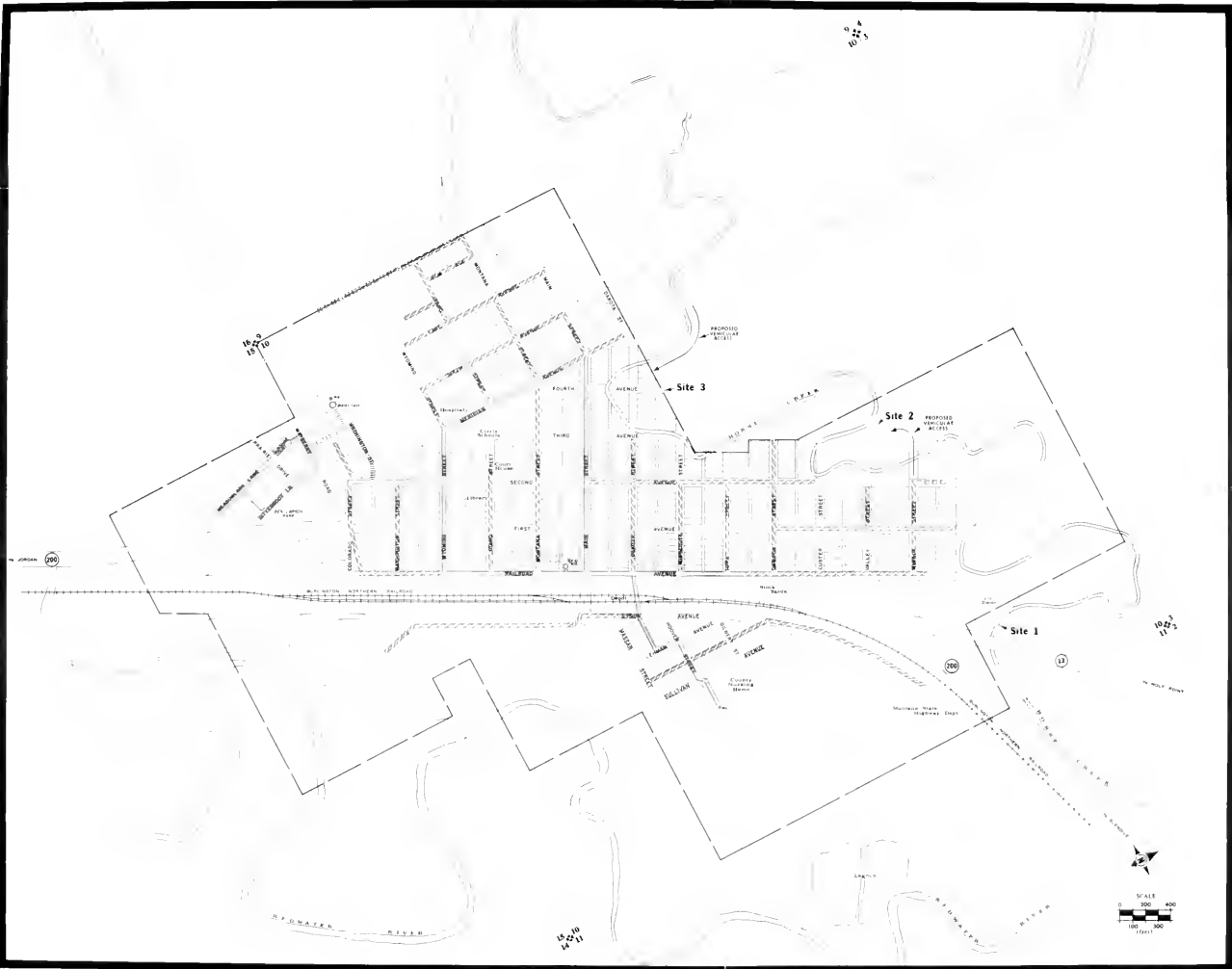
In Brockway it is obvious that water system construction would be impractical







# CITY OF CIRCLE



## McCone County Comprehensive Planning Program Water System

- 2 MAIN
- 4 MAIN
- 6 MAIN
- 8 MAIN
- 10 MAIN





under baseline growth conditions (no growth) and limited population impact, such as would be experienced when a small coal mine becomes operational. Because of the danger of groundwater pollution during accelerated growth (Scenario No. 3), it is most probable that a central water system will be needed. A detailed study will have to be done at that time to determine the feasibility of installing a system such as the one suggested by the consultant.

As an aid to planning future water extensions in Circle, a water system map is presented in Figure 6.

NOTE: Design criteria for water supply and storage recommendations are based on the following assumptions:

- ☐ Average daily consumption was chosen as 150 gal./capita/day and the maximum day as twice the average day, or 300 gal./capita/day.
- ☐ Basic fire flow rate was established at 2250 gpm for Circle and 1000 gpm for Brockway for a two-hour period.

#### C. Solid Waste Systems

##### 1) SOLID WASTE QUANTITIES

The quantity of solid waste generated in the county for the various scenarios that have been delineated for study were estimated and are depicted in the following table. As indicated in the table, the quantities of waste for each scenario were broken down according to jurisdictional entity for the present as well as for the years 1990 and 2000. The quantities were determined by multiplying average waste generation rates by the projected populations for each area of the county. The average waste generation rates that were utilized were determined from a state-wide solid waste study conducted for Montana in 1976.

As indicated in the table, the current quantity of waste generated in the county is estimated to be 1,626 tons/year. As further indicated, the quantities of waste would increase only approximately five percent by the year 2000 if the current conditions (Scenario No. 1) continue. However, if Scenarios 2 or 3 are applicable, the quantities of waste generated in the county will increase approximately 19 and 53 percent, respectively, by the year 2000.



TABLE V-5  
McCONE COUNTY WASTE QUANTITIES  
PROJECTIONS BY DEVELOPMENT SCENARIO  
(TONS PER YEAR)

SCENARIO	1978	1990				2000			
	1	1	2	3		1	2	3	
				Alt. 1	Alt. 2			Alt. 1	Alt. 2
CIRCLE*	751	818	984	1357	1450	879	1041	1414	1507
BROCKWAY**	31	31	64	137	156	31	64	137	156
McCONE CO.** (Rural)	844	820	839	873	883	797	822	843	873
TOTAL	1626	1669	1887	2367	2489	1707	1927	2394	2536

\*Circle Waste Quantities are based on a generation rate of 3.25 lbs./capita/day.

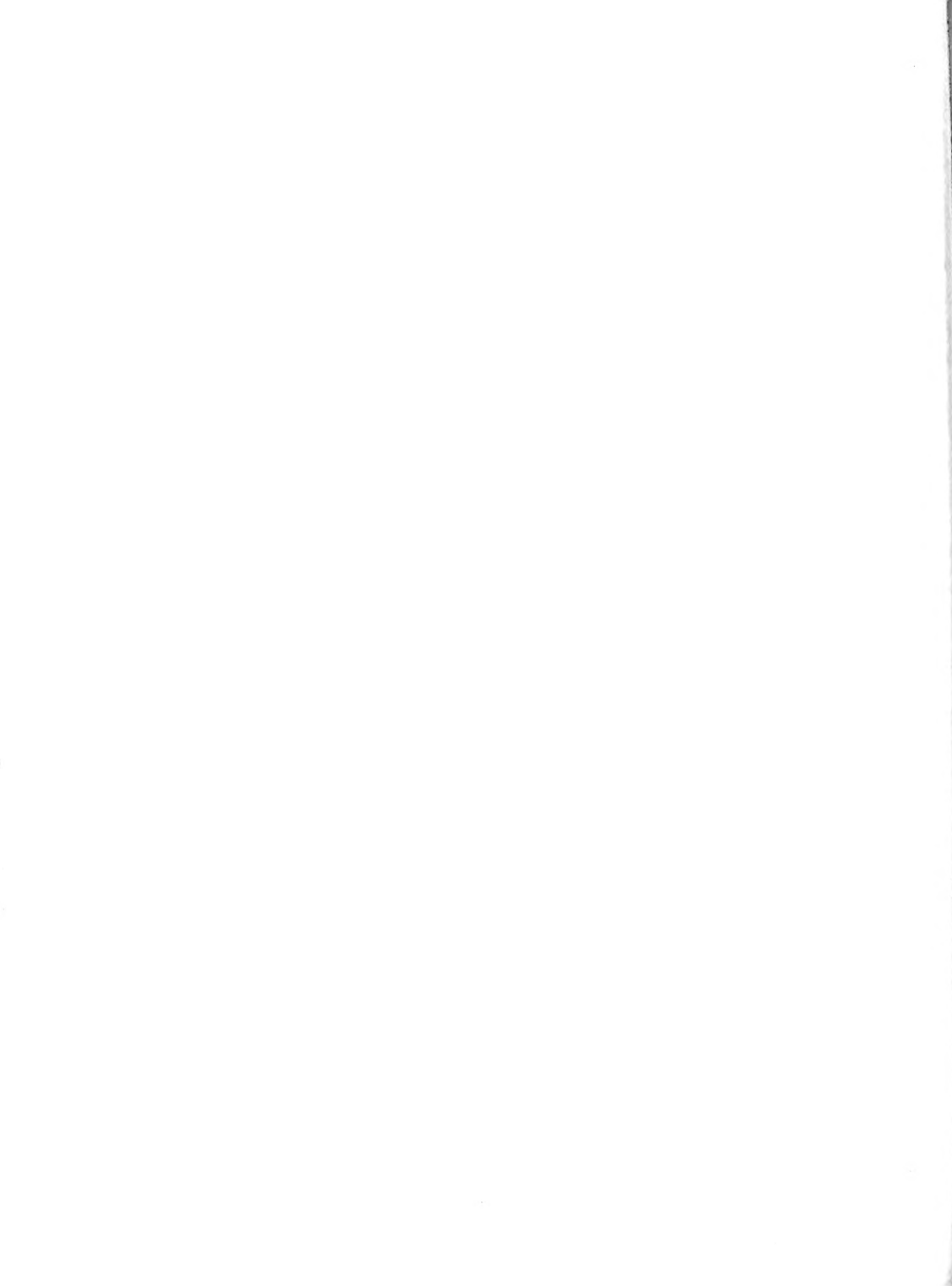
\*\* Rural Waste Quantities are based on a generation rate of 2.25 lbs/capita/day.

NOTE: Peak quantities during construction years are not reflected in totals.

## 2) SOLID WASTE COLLECTION

Currently there is a privately operated solid waste collection and disposal service available to the residents and commercial establishments in McCone County. The private service is based in Circle and operates a disposal site one mile west of Circle. Presently, approximately 80 percent of the residents and commercial establishments in Circle utilize the private service. The remainder of the residents in Circle and the majority of the rural residents of the county do not utilize the available collection service, but rather dispose of their wastes individually at either a public disposal site or on private land.

According to the owner of the local collection service in the county, the increased population and commercial activity as indicated in Scenarios 2 and 3 would have a beneficial impact on the solid waste collection service in the county. The private service has indicated that many additional residential and commercial establishment stops could be made without the addition of manpower or equipment. For example, there is no door-to-door waste collection service available in Brockway due to the small number of residents.



However, if this number grew substantially (Scenario No. 3), a collection service could possibly be cost-effective where currently one is not. The same conditions could possibly hold true for other areas that are relatively rural in nature which may become more densely populated if Scenario No. 3 were to become a reality.

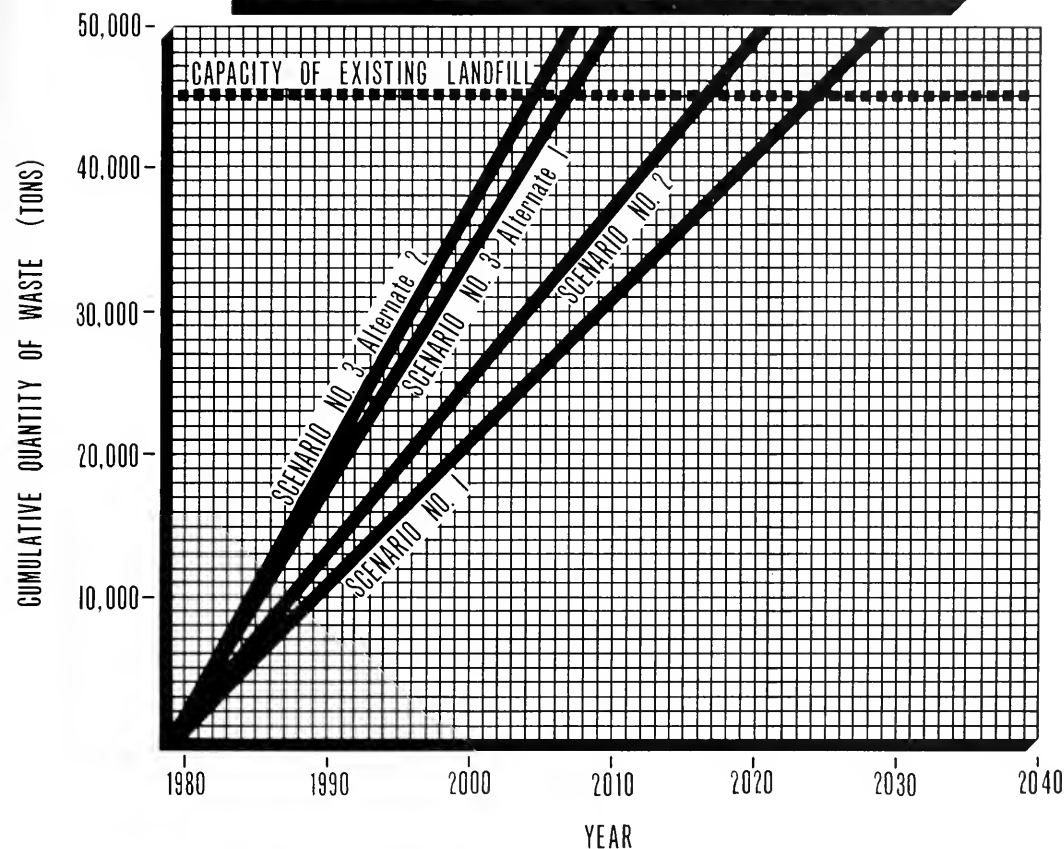
### 3) SOLID WASTE DISPOSAL

Currently there are two public solid waste disposal sites in the county, these being located near Circle and Brockway. The Circle site has been licensed by the State of Montana and is privately owned and operated. The site is ten acres in size and is approximately one-half full. The Brockway site has obtained a "conditional" license from the State of Montana, which basically indicates that the site's operational plan does not meet state standards. Under these conditions, the community has been given one year to meet those standards. The site is privately owned. Funds to operate the site are obtained through the collection of fees paid by the local residents who have formed a private refuse association.

In regard to the impact on the current disposal facilities if the population in the county were to increase dramatically, it is anticipated that the cost per residential unit to operate the sites would decrease. This is primarily due to the fact that the cost to operate a landfill site in the Brockway and Circle areas to accommodate substantially more people would be more than offset by the increased number of residents utilizing, thus paying for, the facilities. It should also be noted that a substantial increase in population could have a short-term negative effect on the county residents, in that the existing disposal sites' useful lives would be shortened due to increased volume of refuse generated. As indicated in Figure 7, the useful life of the Circle landfill under the current conditions (Scenario No.2) would extend through the year 2029. If the conditions prevalent under Scenarios 2 and 3 are found to be the case, however, the useful life of the Circle site would be reduced to some degree. As indicated in the figure, regardless of the scenario evaluated, the current disposal site has ample capacity to meet the city of Circle's waste disposal needs through the end of this century.



# City of Circle Sanitary Landfill Capacity Analysis \*



\* NOTE:  
Represents Quantity of Waste  
Generated in Town of Circle

FIGURE 7

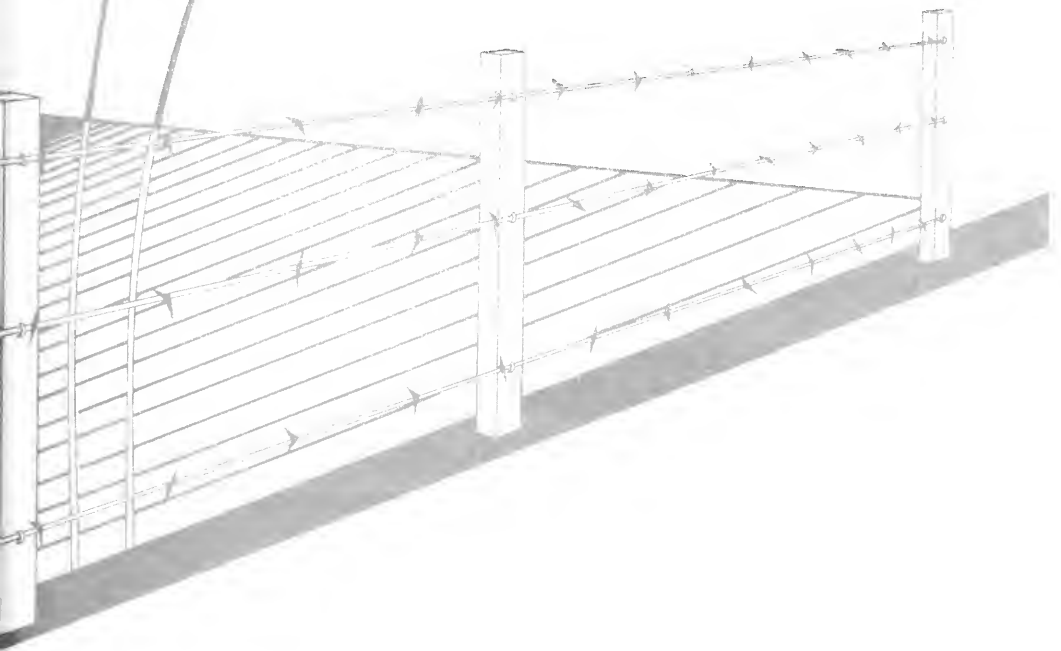




Two stylized wheat stalks with multiple grains are positioned in the upper left quadrant of the page. They are rendered in a simple, graphic style with dark outlines and some internal shading to represent the grains.

## **CHAPTER VI**

# **TRANSPORTATION PLAN**





CHAPTER VI  
TRANSPORTATION PLAN

1. GENERAL

The transportation system performs a crucial role in the everyday function of a community or county. Transportation influences land development patterns, affects the time and money involved in the shipment of raw materials and manufactured commodities, and provides accessibility to housing, recreation and social, educational, cultural and employment sites.

The information presented in the Inventory and Analysis Report is of use in assessing the current situation in McCone County. This section goes "one step beyond" the current situation and addresses future transportation needs of McCone County. This chapter of the report is intended to present guidelines for the logical development of the transportation facilities within the county. Development guidelines assure that additions to the transportation system will not become liabilities and that future needs are anticipated well in advance. In addition to conversations with local and state officials, plans, studies and scheduled projects have been reviewed in hopes of obtaining information relative to the future transportation needs of McCone County.

2. AIR TRANSPORTATION

Air transportation within McCone County was discussed in the Inventory and Analysis Report. An Airport Master Plan completed in 1976 by Thomas, Dean & Hoskins and T.A.P., Inc. projected the aviation demands of Circle and McCone County and established guidelines for future development which will satisfy these demands and remain competitive with the environment, community development, other needs of transportation and other public projects. The Master Plan offered a number of conclusions which are summarized below:

- ☐ Annual takeoffs, landings, and the number of based aircraft are expected to more than double by 1995. The expected increase in the level of aircraft movement is not expected to create any serious problems with airfield congestion.
- ☐ The basic runway configuration should ultimately be upgraded to General Utility standards.
- ☐ Zoning should be enacted to protect against future land usage changes that would be detrimental to the airport. Also, an airspace zoning ordinance should be adopted to control the height and placement of structures. It is particularly important that zoning be accomplished because of the potential for city growth due to the natural resource development expected to occur in the Circle area.



- ☐ The airport should acquire the land needed for future airport expansion.
- ☐ Land use should continue to remain compatible with the surrounding area.
- ☐ Based upon projected increases in the utilization of the airport, noise levels are expected to increase. However, no serious noise problems are anticipated.
- ☐ The cumulative impact of the proposed Master Plan indicates that nothing of environmental consequence will result from future expansion of the airport facility.
- ☐ The Circle West project will have a definite bearing upon the subsequent development of the Circle Airport. The local share of any airport improvements costs will be determined in part by the natural resource development within the county.

The following are the specific recommendations included in the Airport Master Plan. These suggested improvements are designed to upgrade Circle's airport to today's safety standards.

**TABLE VI-1**  
**RECOMMENDED AIRPORT IMPROVEMENTS\***

---

**1976-1980 (Phase I)**

- Acquire land, S.E. runway extension, clear zone, 60 acres.
- Extend, overlay and widen Runway 12/30 from 3,000' x 50' to 4,100' x 75' BU II.
- Construct parallel taxiway 40' x 4,100' including stubs.
- Install MI lights (to replace existing lights), 2-box VASI, REIL on RWY 12/30.
- Abandon two sections county road, construct new curve.
- Remove utility building (No. 2)
- Remove buildings Nos. 3 and 4.
- Remove two "T" hangars - Nos. 5 and 6.
- Construct two five-unit hangars with paved access.
- Expand paved apron 8,335 sq. yd. overlay existing apron.
- Construct new access road - 1,300'.
- Fence GA terminal area, 4' woven wire x 1,000'.
- Install wind recorder Runway 3/21.
- Install culverts and fill material Runway 3/21.

**1980-1985 (Phase II)**

- Extend Runway 12/30 by 500' to total of 4,600' x 75' GU.
- Extend parallel taxiway by 500' to total of 4,600' x 40'.

\* Taken from 1976 Airport Master Plan by Thomas, Dean & Hoskins, and T.A.P., Inc.



- Install MI lights on 500' extension, Runway 12/30.
- Construct two five-unit hangars with paved access.
- Install 4' woven wire perimeter fence.
- Construct paved auto parking area.
- Construct airport maintenance building 24' x 40'.
- Expand paved apron area 4,812 sq. yds.
- Purchase land, clear zone Runway 3/21 - 11 acres.

#### 1985-1995 (Phase III)

- Expand paved apron, 2,460 sq. yds.
- Construct one five-unit hangar with paved access.
- Paved Runway 3/21 BU I 50' x 3,300'.
- Purchase land for future BT clear zone - 21 acres.

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These recommendations are based on an inventory and evaluation of existing facilities, projections of aviation demand, FAA design guidelines and local desires for airport improvements as expressed by administrators and users.

### 3. RAIL TRANSPORTATION

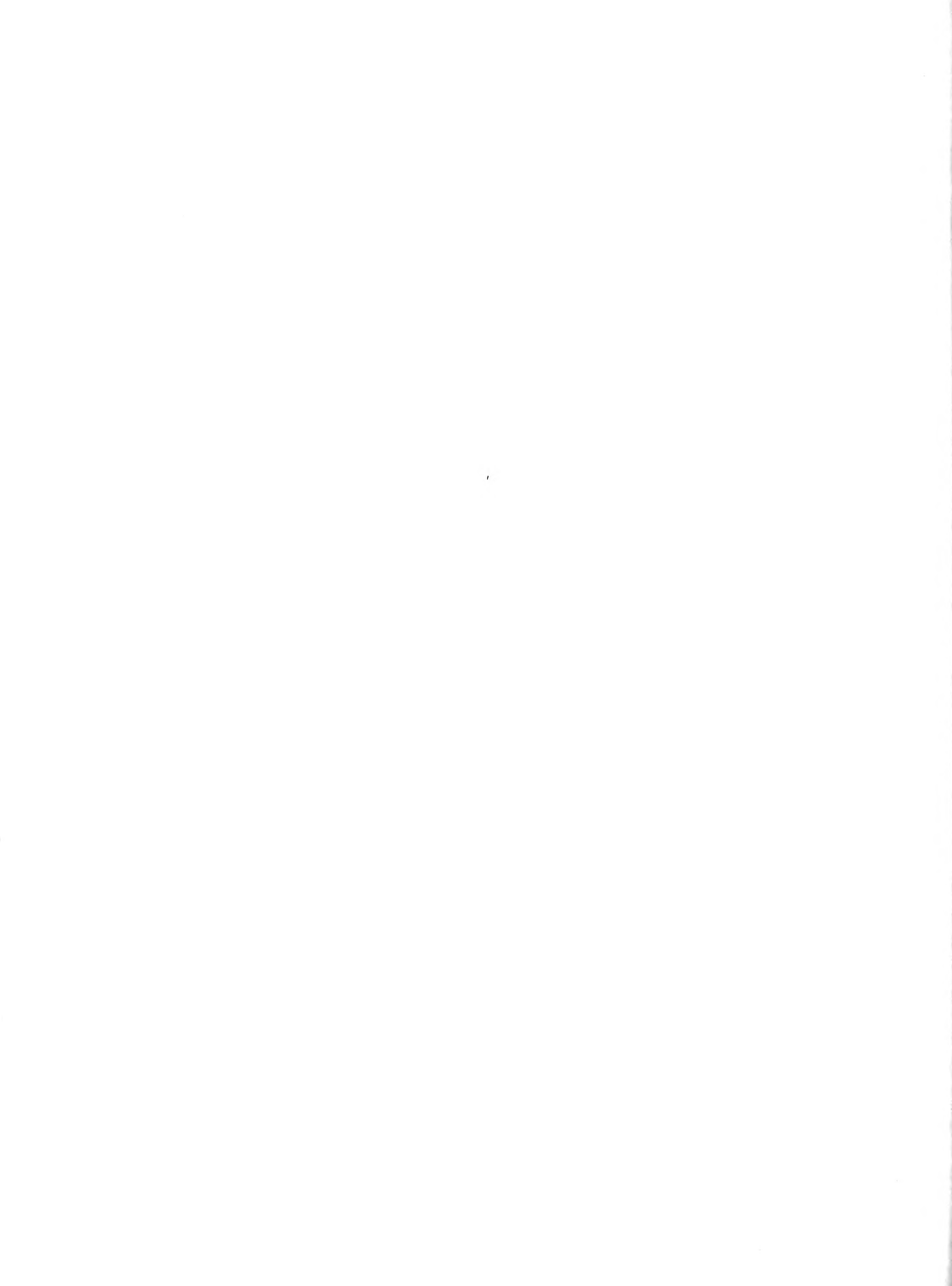
The existing rail service in McCone County was discussed in the Inventory and Analysis Report previously submitted. As the information provided in the report indicates, the chief function of the rail system in McCone County is that of importing manufactured commodities and exporting farm products, principally grain. Because of the nature of McCone County and the reliance upon agriculture as the mainstay of the county's economy, the rail system is expected to retain this role in the future.

The role that the rail system has in McCone County may be expanded as natural resource development in eastern Montana occurs. McCone County, like many other eastern Montana counties, is rich in lignite coal deposits. Because of the nature of development likely to occur within the county, rail transportation would provide the most economical and efficient mode of transporting raw materials or manufactured commodities. The proposed Circle West mine and subsequent industrial development would most likely be served by a spur line. The exact location and length of critical rail transport lines have not yet been determined, but will necessarily be indicated on environmental impact statements and final facility plans.

### 4. ROADS AND STREETS

#### A. Road and Street Problems

The main problem associated with McCone County roads is that of maintenance. Within





the county, the number of miles of roadway is extremely large when compared to the population served by the roads, resulting in a consistently high, but inadequate county road budget expenditure. Problems have resulted from some areas receiving less maintenance than others. County roads in some instances lack proper grade elevation and drainage, causing impassable conditions during winter and wet months. Pavement condition, narrow pavement width and narrow shoulders are common problems within the county road system. Severe erosional problems have been encountered as a result of inadequate base material for roads. In addition, some bridges within the county have deteriorated to a point where rehabilitation or reconstruction is necessary.

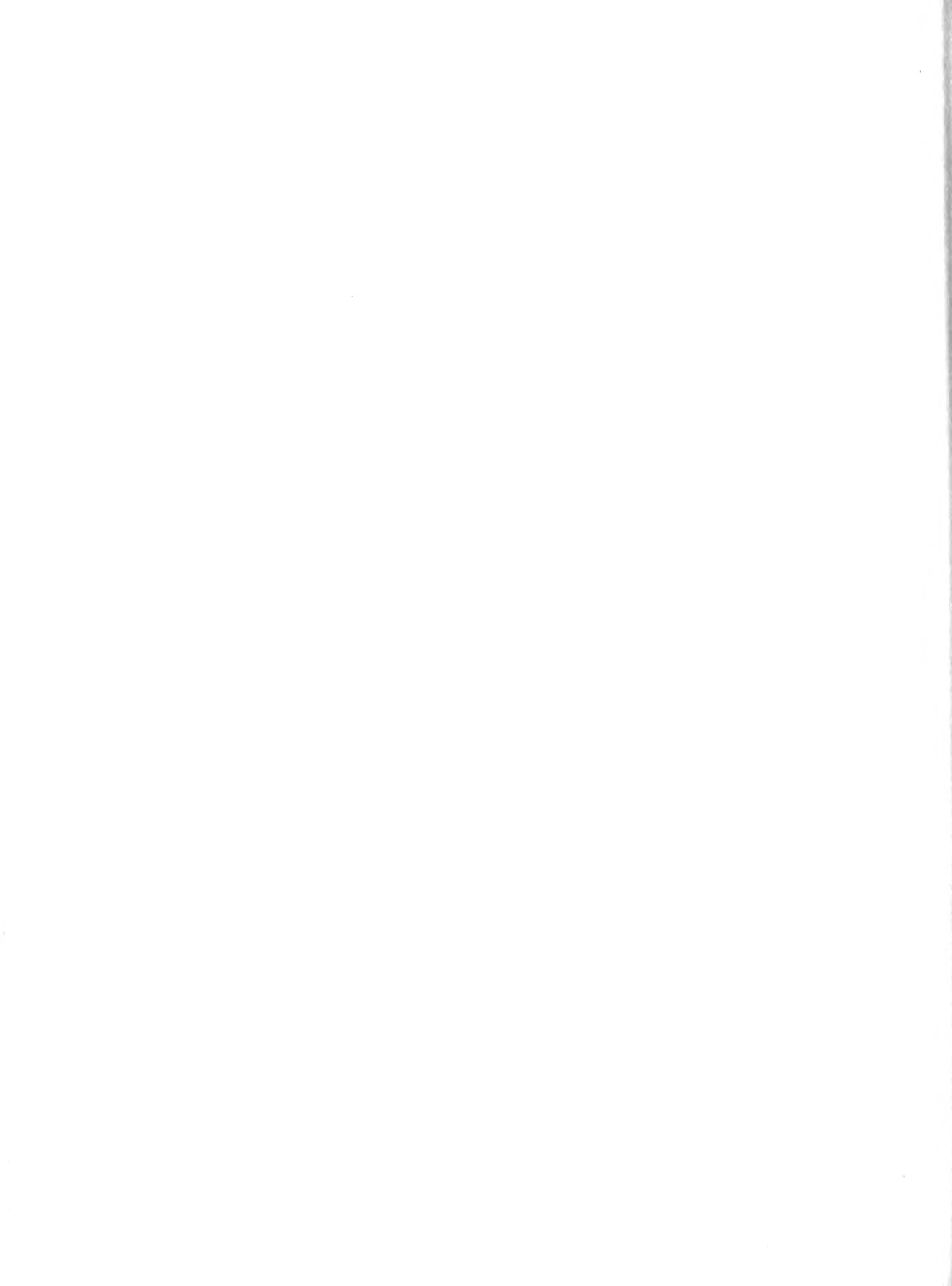
Streets within the City of Circle are in generally good condition as a result of a city-wide Special Improvements District for street paving. Some minor breakups and drainage problems requiring periodic maintenance have been experienced.

#### B. Road Construction Standards

The establishment of road construction standards is important for several reasons, the most important of which is safety. Standards insure that design of roadways within the county is constant with the function each roadway performs. By adopting road construction standards, local roads become safer as roadway and shoulder widths, materials and other design considerations are consistent throughout the county. Standardization of road design also results in material economy and ensures that a sufficient roadway design life is established.

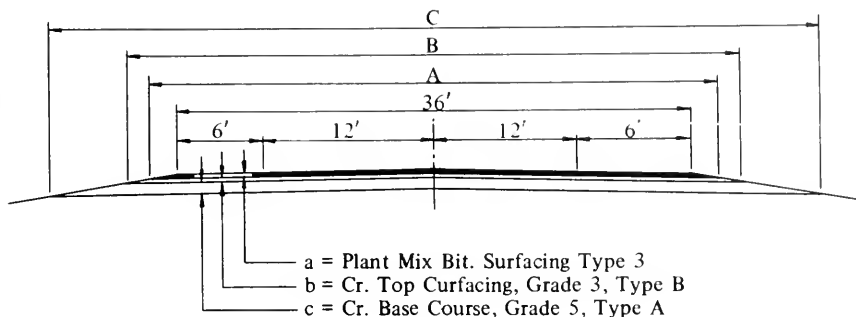
Two sources of available road construction standards are from the Montana Department of Highways Functional Classification and Needs Study and the Model Subdivision Regulations established by the Montana Department of Community Affairs. The standards established by the Highway Department are based upon analysis of traffic volumes and other characteristics of road usage. Based on county road information contained in the Inventory and Analysis Report, several typical road sections were chosen for the various traffic volume levels characteristic of McCone County. These recommended road sections (Figures 8, 9, and 10 are utilized throughout the State Federal Aid Primary and Secondary road system. Figure 11 depicts a recommended standard for gravel local roads and gravel minor collectors.

The Model Subdivision Regulations for Montana offer general design standards for urban-suburban and rural subdivisions (these regulations were adopted verbatim by McCone County). The regulations set down general Street and Road Standards regarding



Design Std. No.s 13 & 31Dwg. No. 5ADT Group 700 - 1400Pavement Design No. 4

FAP



Typical Section Dimensions

	Plant Mix		Top Surf.		Base Crse.	
	a	A	b	B	c	C
Cost Area 1	0.25	39.5	0.15	41.5	0.90	54.0
Cost Area 2	0.30	40.2	0.20	43.1	1.20	60.0

Typical Section Quantities Per Mile

Course	COST AREA 1			COST AREA 2		
	End Area	Surf. Area	Volume	End Area	Surf. Area	Volume
a. Plant Mix	9.4	22,058.4	1,838.2	11.4	22,293.0	2,229.3
b. Top Surf.	6.1	23,858.0	1,192.9	8.3	24,346.5	1,623.1
c. Base Crse.	43.0	28,029.7	8,408.9	61.9	30,262.2	12,104.9
d. Prime		23,858.0			24,346.5	
e. Tack		23,858.0			24,346.5	

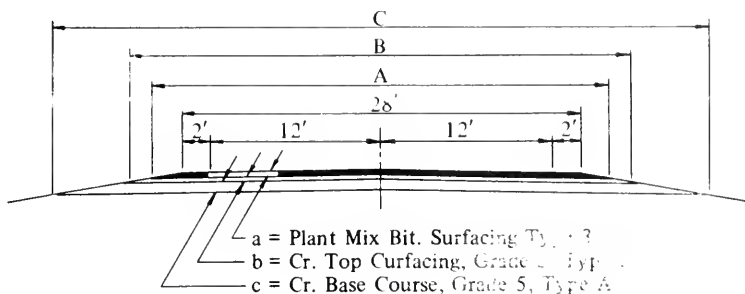
Base &amp; Surfacing Quantities Per Mile

No.	Item	Unit	Cost Area 1 Quantity/Mi.	Cost Area 2 Quantity/Mi.
1	Rolling Surface Courses	Unit	95.4	136.0
2	Water Surface Courses	M. Gal.	444.1	634.9
3	Cr. Base Course, Grade 5, Type A	Ton	15,556.5	22,394.1
4	Cr. Top Surfacing, Grade 3, Type B	Ton	2,206.9	3,002.7
5	Plant Mix Bituminous Surfacing, Type 3	Ton	3,543.1	4,297.0
6	Mineral Filler	Ton	35.4	43.0
7	Asphalt Cement 120 - 150	Ton	230.3	279.3
8	Liquid Asphalt MC-70 (Prime)	Ton	30.4	31.0
9	Emulsified Asphalt SS-1 (Tack)	Gal.	2,385.8	2,434.6
10	Median Guard Rail, Concrete Pre-Cast	L.F.		
11	Median Curb	L.F.		
12	Concr. Curb and Gutter	L.F.		
13	Sidewalks	Sq. Ft.		



Design Std. No.s 12, 30Dwg. No. 8ADT Group 450 - 700Pavement Design No. 3

FAS



Typical Section Dimensions

	Plant Mix		Top Surf.		Base Crse.	
	a	A	b	B	c	C
Cost Area 1	0.20	30.8	0.15	32.9	0.80	44.0
Cost Area 2	0.25	31.5	0.15	33.7	1.15	50.0

Typical Section Quantities Per Mile

Course	COST AREA 1			COST AREA 2		
	End Area	Surf. Area	Volume	End Area	Surf. Area	Volume
a. Plant Mix	5.9	17,307.0	1,153.8	7.4	17,365.2	1,447.1
b. Top Surf.	4.8	18,774.0	938.7	4.9	19,164.0	958.2
c. Base Crse.	30.8	22,586.6	6,023.1	48.1	24,537.9	9,406.2
d. Prime		18,774.0			19,164.0	
e. Tack		18,774.0			19,164.0	

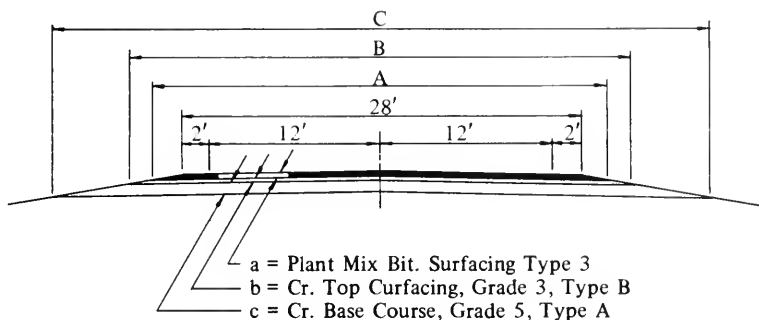
Base &amp; Surfacing Quantities Per Mile

No.	Item	Unit	Cost Area 1 Quantity/Mi.	Cost Area 2 Quantity/Mi.
1	Rolling Surface Courses -----	Unit	69.6	101.2
2	Water Surface Courses -----	M. Gal.	322.0	479.4
3	Cr. Base Course, Grade 5, Type A -----	Ton	11,142.7	17,401.5
4	Cr. Top Surfacing, Grade 3, Type B -----	Ton	1,736.6	1,772.7
5	Plant Mix Bituminous Surfacing, Type 3 -----	Ton	2,223.9	2,789.3
6	Mineral Filler -----	Ton	22.2	27.9
7	Asphalt Cement 120 - 150 -----	Ton	144.6	181.3
8	Liquid Asphalt MC-70 (Prime) -----	Ton	23.9	24.4
9	Emulsified Asphalt SS-1 (Tack) -----	Gal.	1,877.4	1,916.4
10	Median Guard Rail, Concrete Pre-Cast -----	L.F.		
11	Median Curb -----	L.F.		
12	Concr. Curb and Gutter -----	L.F.		
13	Sidewalks -----	Sq. Ft.		



Design Std. No.s 7, 8, 9; 25, 26, 27Dwg. No. 9ADT Group 100 - 450Pavement Design No. 2

FAS



Typical Section Dimensions

	Plant Mix		Top Surf.		Base Crse.	
	a	A	b	B	c	C
Cost Area 1	0.20	30.9	0.15	33.1	0.75	44.0
Cost Area 2	0.20	30.7	0.15	32.7	1.15	48.0

Typical Section Quantities Per Mile

Course	COST AREA 1			COST AREA 2		
	End Area	Surf. Area	Volume	End Area	Surf. Area	Volume
a. Plant Mix	5.9	17,307.0	1,153.8	5.9	17,307.0	1,153.8
b. Top Surf.	4.8	18,774.0	938.7	4.8	18,774.0	938.7
c. Base Crse.	28.9	22,606.4	5,651.6	46.4	23,670.8	9,073.8
d. Prime		18,774.0			18,774.0	
e. Tack		18,774.0			18,774.0	

Base &amp; Surfacing Quantities Per Mile

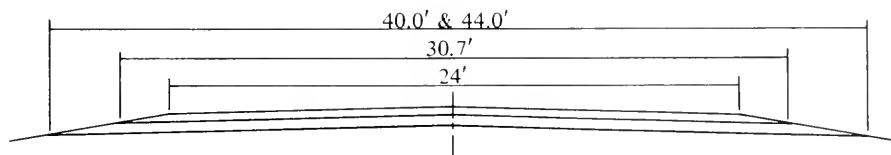
No.	Item	Unit	Cost Area 1 Quantity/Mi.	Cost Area 2 Quantity/Mi.
1	Rolling Surface Courses -----	Unit	66.2	97.8
2	Water Surface Courses -----	M. Gal.	304.8	463.1
3	Cr. Base Course, Grade 5, Type A -----	Ton	10,455.5	16,786.5
4	Cr. Top Surfacing, Grade 3, Type B -----	Ton	1,736.6	1,736.6
5	Plant Mix Bituminous Surfacing, Type 3 -----	Ton	2,223.9	2,223.9
6	Mineral Filler -----	Ton	22.2	22.2
7	Asphalt Cement 120 - 150 -----	Ton	144.6	144.6
8	Liquid Asphalt MC-70 (Prime) -----	Ton	23.9	23.9
9	Emulsified Asphalt SS-1 (Tack) -----	Gal.	1,877.4	1,877.4
10	Median Guard Rail, Concrete Pre-Cast -----	L.F.		
11	Median Curb -----	L.F.		
12	Concr. Curb and Gutter -----	L.F.		
13	Sidewalks -----	Sq. Ft.		





## Gravel Section Costs Per Mile

(Gravel Local Roads &amp; Gravel Minor Collectors)



0.50' Cr. Top Surf.

( 0.70' Select Surf. (Cost Area 1)

( 1.00' Select Surf. (Cost Area 2)

Cost Area-	End Areas: Sq. Ft.		Volumes: C.Y. / Mile		Tons / Mile	
	1	2	1	2	1	2
Top Surf.	13.7	13.7	2,679.1	2,679.1	4,956.3	4,956.3
Select Surf.	24.7	37.3	4,830.2	7,294.2	8,935.9	13,494.3

## Costs Per Mile

No.	Item	COST AREA ONE			COST AREA TWO		
		Quant./Mile	Unit Price	Cost/Mile	Quant./Mile	Unit Price	Cost/Mile
1.	Rolling Units	84.3	14.21	1,197.90	107.1	12.79	1,369.81
2.	Water M.Gal.	347.3	2.69	934.24	461.3	3.09	1,425.42
3.	Cr. Top Surf. Ton	4,956.3	2.32	11,498.62	4,956.3	2.33	11,548.18
4.	Select Surf. Ton	8,935.9	1.26	11,259.23	13,494.3	1.20	16,193.16
5.	Binder C.Y.	144.1	1.42	204.62	144.1	1.38	198.86
6.	Haul Binder Mi-Yd.	288.2	0.18	51.88	288.2	0.16	46.11
		Sub-total --- 25,146			Sub-total --- 30,781		
		+ 10% Eng. --- 2,515			+ 10% Eng. --- 3,078		
		Total ----- 27,661			Total ----- 33,860		

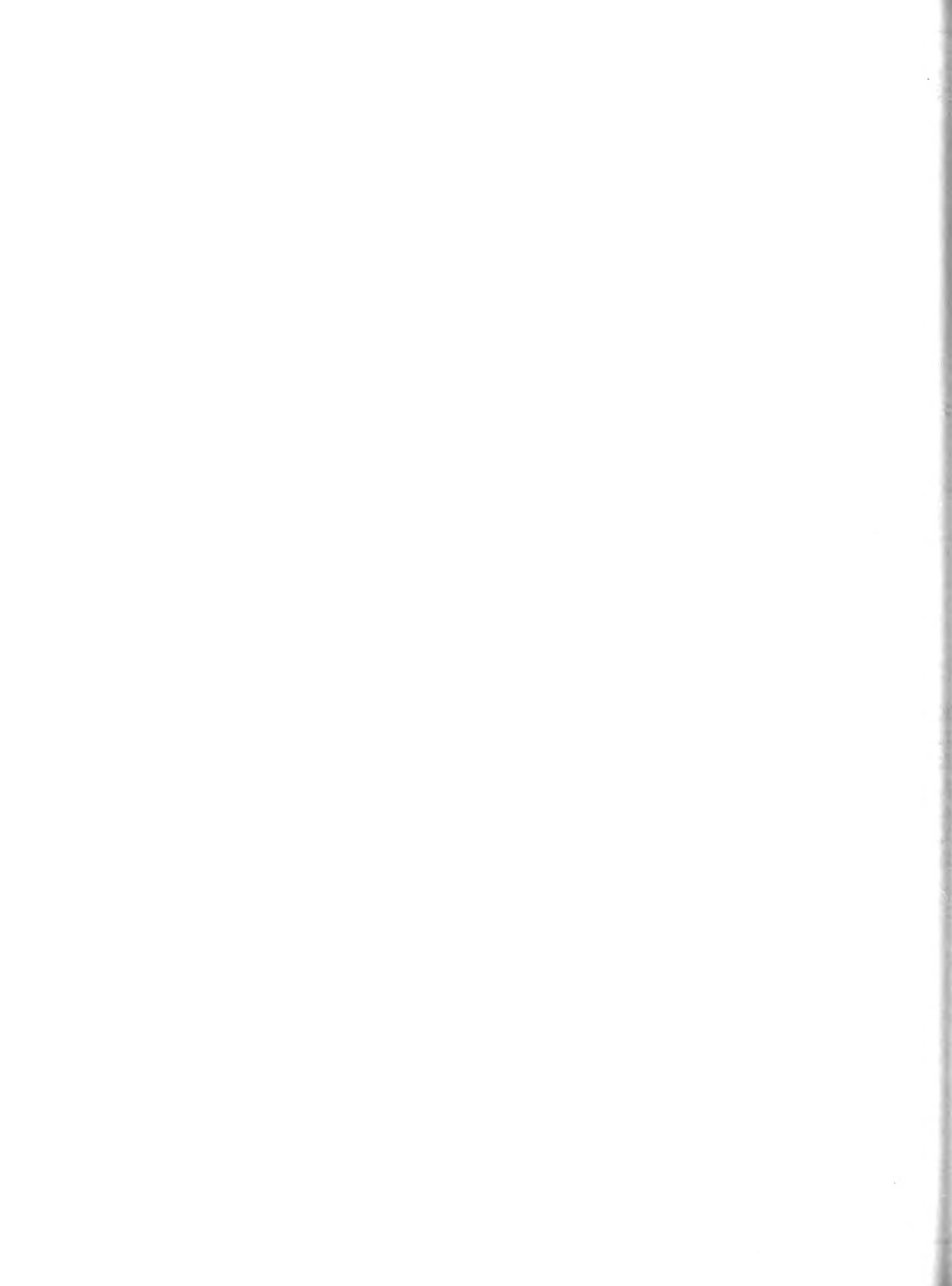


TABLE VI — 2

## DESIGN STANDARDS — URBAN &amp; SUBURBAN STREETS

	ARTERIAL		COLLECTOR		LOCAL	
	Max. Curve (Degrees)	Min. Radius (Feet)	Max. Curve (Degrees)	Min. Radius (Feet)	Max. Curve (Degrees)	Min. Radius (Feet)
1. Curvature <sup>a</sup>	10.0	561	(30 mph) <sup>d</sup> 19.0	300	(20 mph) <sup>d</sup> 53.0	120
2. Min. Stopping Sight Distance (ft)	375		200		150	
3. Max. Grade <sup>b</sup> (%)						
Flat & Rolling <sup>e</sup>	7		8		9	
Hilly <sup>e</sup>	9		10		11	
4. New Bridges						
Width (curb-to-curb)	44		36		34	
Design Load (AASHO) <sup>c</sup>	H-20		H-20		H-15	
Vertical Clearance	14.5		14.5		14.5	
5. Min. Pavement Width (ft)	36 <sup>f</sup>		36		26	
6. Min. Roadway Width (ft)	36 <sup>f</sup>		36		26	
7. Right-of-Way Width (ft)	80		60		60	

Cul-De-Sac: Turn Around Radius (Roadway Width) 40 feet (8 feet additional where parking will be permitted). Maximum Length 600 feet.

Right-of-Way Width for Cul-de-sacs serving no more than 10 dwellings may be 40 feet.

a. Curvature is based on a superelevation of .04/ft.

b. Grades may be steeper for short distance provided traffic safety is assured.

c. American Association of State Highway Officials.

d. Design speed of streets.

e. Flat & rolling terrain is that with a cross slope of less than 15%. Hilly terrain is that with a cross slope of 15% or greater.

f. No parking permitted except emergency.



TABLE VI - 3

## DESIGN STANDARDS - RURAL ROADS

	ARTERIAL		COLLECTOR		LOCAL	
	Max. Curve (Degrees)	Min. Radius (Feet)	Max. Curve (Degrees)	Min. Radius (Feet)	Max. Curve (Degrees)	Min. Radius (Feet)
1. Curvature <sup>a</sup>	10.0	561	(30 mph) <sup>e</sup> 19.0	300	(20 mph) <sup>e</sup> 53.5	120
2. Min. Stopping Sight Distance (ft)	475		350		150	
3. Max. Grade <sup>b</sup> (%)						
Flat & Rolling <sup>f</sup>	6		7		9	
Hilly <sup>f</sup>	8		9		11	
4. New Bridges						
Width (curb-to-curb)	28		28		20	
Design Load (AASHO) <sup>d</sup>	H-20		H-20		H-15	
Vertical Clearance	14.5		14.5		14.5	
5. Min. Pavement Width <sup>c</sup> (ft)	36		26		24	
6. Min. Roadway Width (ft)	36		26		24	
7. Right-of-Way Width (ft)	80		60		60	
Cul-De-Sac: Turn Around Radius (Roadway Width) 40 feet (8 feet additional where parking will be permitted). Maximum Length 600 feet.						
Right-of-Way Width for Cul-de-sacs serving no more than 10 dwellings may be 40 feet.						

a. Curvature is based on a superelevation of .08/ft.

b. Grades may be steeper for short distance provided traffic safety is assured.

c. For guardrail installation, width of shoulder to be additional two feet.

d. American Association of State Highway Officials.

e. Design speed of road.

f. Flat &amp; rolling terrain is that with a cross slope of less than 15%. Hilly terrain is that with a cross slope of 15% or greater.



intersection design, installation of curbs, gutters and sidewalks and general design requirements for the safe and logical layout of subdivision roads and streets. Tables VI-2 and VI-3 summarize the design criteria established by the Subdivision Regulations for rural roads and urban-suburban streets. Each subdivision should be thoroughly reviewed to assure compliance with the roadway construction and drainage standards.

C. Priority Ranking Procedure

In addition to the utilization of roadway design standards, the establishment of a priority ranking system will allow the county another means of guiding roadway development within its jurisdiction. Because the county budget is insufficient to maintain the existing system, it is important that new roads that are added to the county system are necessary and provide the best service to county residents. The priority ranking procedure provides a means of anticipating major expenses for the road and street improvements. Such a system would provide the basis for determining in advance those sections of road most important to the road network within the county. This allows the county to initiate action and to take corrective measures for problem areas before they become critical.

The following is a suggested point rating system for setting road priorities.

	<u>ITEM</u>	<u>POINTS ASSIGNED</u>
1.	Average Daily Traffic - 25 point maximum	
	50 - 59 vehicles per day. ....	6
	60 - 69 vehicles per day . ....	7
	70 - 79 vehicles per day. ....	8
	80 - 89 vehicles per day. ....	9
	90 - 99 vehicles per day. ....	10
	100 - 109 vehicles per day. ....	11
	continue to 240	
	240 and over. ....	25 point maximum
2.	Functional Classification - 10 point maximum	
	Local Access . ....	5
	Collector (connecting link) . ....	7
	Minor Arterial (connecting link) . ....	8
	Major Arterial (through route) . ....	10





## 3. School Bus Route - 10 point maximum

Points are assigned based on the ratio of the length of road used by the school bus to the total length of the road. For example, if a school bus travels six miles over a road ten miles long, the road would receive six points.  $(6/10 \times 10 = 6 \text{ points})$  . . . . . 10 point maximum

## 4. Main Route - 5 point maximum

This point value is determined by dividing the points for school bus (Item 3) by 2 . . . . . 5 point maximum

## 5. Industry Served - 10 point maximum

Number of employees using route:

0 - 5 employees . . . . .	2
6 - 10 employees . . . . .	4
11 - 30 employees . . . . .	6
31 - 45 employees . . . . .	8
46 and over . . . . .	10

## 6. Recreation Served - 15 point maximum

Route to major recreation area:

Importance of area should be relative to other areas in the county and should be based on the number of persons actually using the area for recreational purposes and estimates of the number of persons who might use the area if access was improved or provided into the area . . . . . 1 - 10

Average length of recreation season:

$\frac{1}{2}$  point given for each month of the average length of the season; i.e., an area used exclusively for hunting for only two months a year would receive only 1 point. An area used for boating, fishing and swimming for six months and ice fishing for two months would receive 4 points . . . . . 5 point maximum

## 7. Houses Per Mile - no limit

Actual number of houses divided by the number of miles. . . . . no limit



## 8. Distance from Population Center - 15 point maximum

Roads connecting or carrying traffic in the direction of or away from population centers can gain points in the following manner: draw radii from the center of the urban community at two-mile intervals. Rate as follows:

Distance From Center	Size of Population Center		
	0 - 500	500 - 1000	1000 - up
0 - 2 miles	2	3	4
2 - 4 miles	1	2	3
4 - 6 miles	0	1	2
6 - 8 miles	0	0	1
8 - 10 miles	0	0	0

## 9. Connects Surfaced Roads - 10 point maximum

Connects paved roads . . . . .	10
Joins one paved road . . . . .	6
Connects improved gravel roads . . . . .	3
Connects unimproved roads . . . . .	0

## 10. Right-of-Way Conditions - 5 point maximum

Right-of-way more than 60 feet . . . . .	1 - 5
Right-of-way less than 60 feet . . . . .	Minus 1 - 5
Points are assigned at five-foot intervals, one point for each five feet above or below 60 feet.	

The point rating system should be subjected to careful study by the local planning board and adjustments should be made to meet local conditions. The system is intended to be flexible. The planning board or county road department should be permitted to add or deduct special bonus points to meet special circumstances. In many instances, it would be advisable to rate roads and highways by segments rather than the entire road length.

The adoption of a point rating system would provide an excellent means of insuring a smooth, efficient, economical way of developing streets and thoroughfares in McCone County in a manner flexible enough to meet the changes in demand and land use development.

NOTE: The initiation of a point rating system does not preclude emergency road construction or maintenance needs which are generally taken care of on a piecemeal or on-call basis.



## D. Programmed Improvements

### 1. Montana Department of Highways Construction Program

The Montana Department of Highways has a list of improvements to the Federal Aid Primary (FAP) and Federal Aid Secondary (FAS) road systems scheduled to be undertaken within the next five fiscal years and beyond.

#### (a) Primary System Improvements

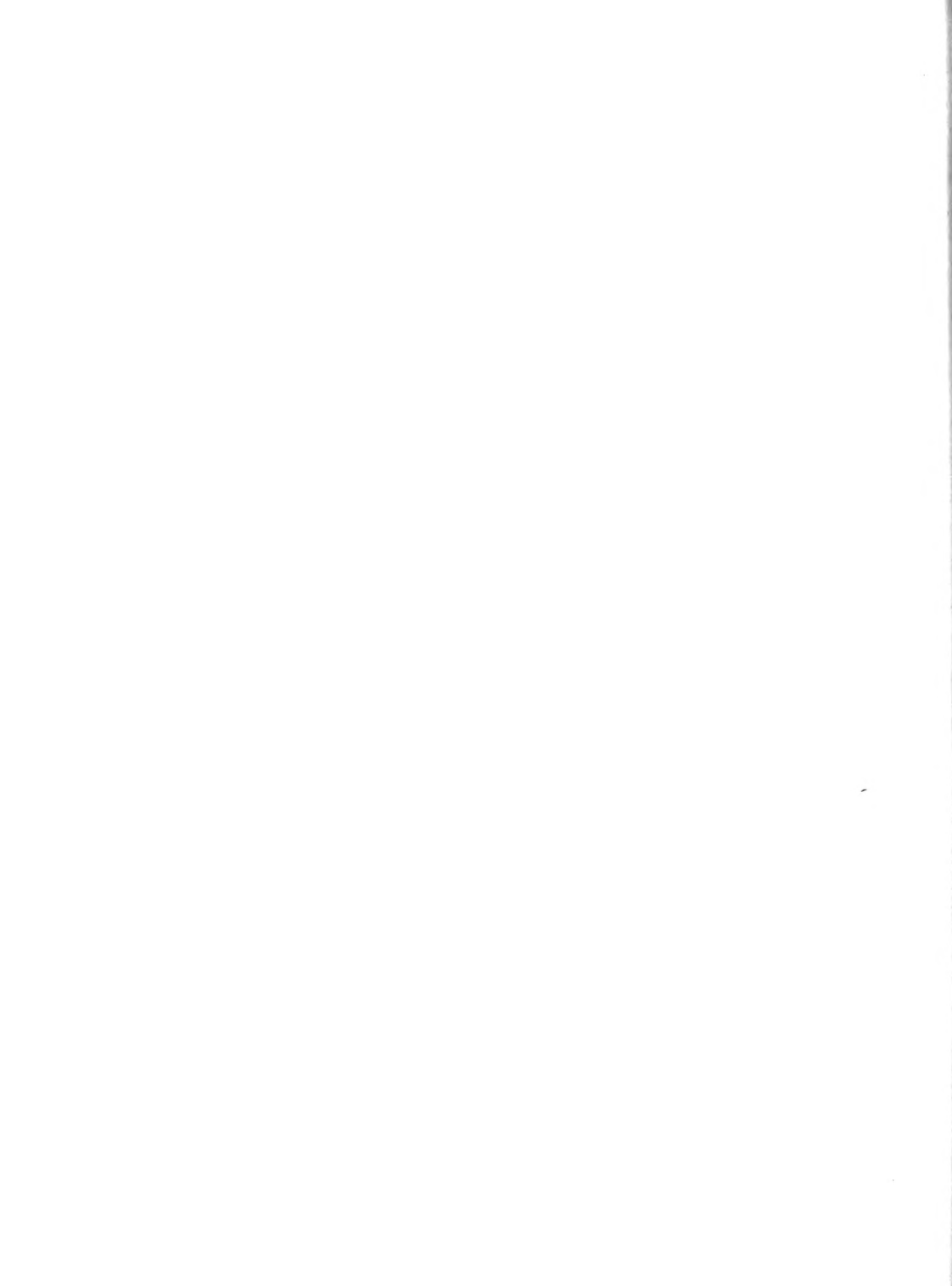
Bridge replacement within an 8.5 mile stretch of Montana 13 (FAP 25) extending northward from the City of Circle is scheduled to be let for bid by July of 1982. Engineering studies regarding reconstruction of this same section of road have also been undertaken. However, this project is beyond consideration during this construction period. In addition to the previously mentioned projects, a new bridge over the Missouri River on Montana 13 is scheduled. Bids will be let during fiscal year 1984 if the anticipated funding is available.

#### (b) Secondary System Improvements

Improvements being considered for the Secondary Road System within McCone County include the upgrading and resurfacing of two major secondary routes. Approximately 10.5 miles of FAS 252 extending westward from Circle toward Weldon is scheduled to be bid during February of 1981. Rehabilitation of this section of road has been given top priority. Consideration has also been given to a resurfacing project extending south of Brockway a distance of 10 miles. Preliminary engineering is being done at the present time; however, scheduling of the project will be dependent upon available funding.

Additional projects may result from a survey of the structural condition of off-system bridges. County bridges throughout the state are presently being evaluated and priorities for rehabilitation will be selected from the analysis procedure. Federal funding is available for rehabilitation or complete replacement of the bridges, providing certain criteria are met. It is possible that projects of this nature could be undertaken within McCone County in the near future.

Recent changes in policy regarding allotment of federal funds to states require that 20 percent of the total funds available to a state be utilized for resurfacing and rehabilitation of the Federal Aid Primary road systems. At this time, analysis is being undertaken in an attempt to determine the sections of the system which would be priority projects. It is possible that some resurfacing projects may result from this program.



## 2. Local Road Improvements

### (a) City of Circle Street Improvements

As previously mentioned, the streets within the City of Circle are in relatively good condition. Based on conversations with local officials, it was determined that no major street improvements will be initiated in the near future; however, annual street maintenance and some alley paving is scheduled.

### (b) County Road Improvements

The improvements scheduled on the local roads in the county are listed as follows:

#### COMMISSIONER DISTRICT 1

- Construct a new bridge over Remuda Creek
- Replace the existing bridge over Wolf Creek
- Elevate and gravel six miles of the Sunnyside Road
- Elevate and gravel five miles of the Nickwall Road
- Replace the cement slab on the Sand Creek Road

#### COMMISSIONER DISTRICT 2

- Elevate and gravel six miles of the Bill Jordan Road
- Elevate and scoria six miles of the road south of Watkins
- Elevate and scoria five miles of the road from Dreyer Ranch to Twitchels

#### COMMISSIONER DISTRICT 3

- Elevate and gravel ten miles of the Slaughterhouse Road beginning ten miles from Circle (to Cow Creek Road).
- Replace the concrete slab near Lost Creek
- Ten miles of new construction and three miles elevate and gravel on the unnamed road in the southeast corner of the county.

### E. Coal Development Projects - Road Systems Impact

When and if major development (described in detail in Chapter II of this report) occurs in McCone County, impacts will surely be felt upon the county road network. The road network will provide the access routes for the transportation of construction materials and workers during the initial phases of the proposal and continue to provide access for operation and maintenance personnel after the plant is constructed. It is assumed that road improvements will be necessary to provide adequate service for construction workers commuting from the surrounding





Circle, Brockway and Glasgow area and will not be used to transport the energy resource material.

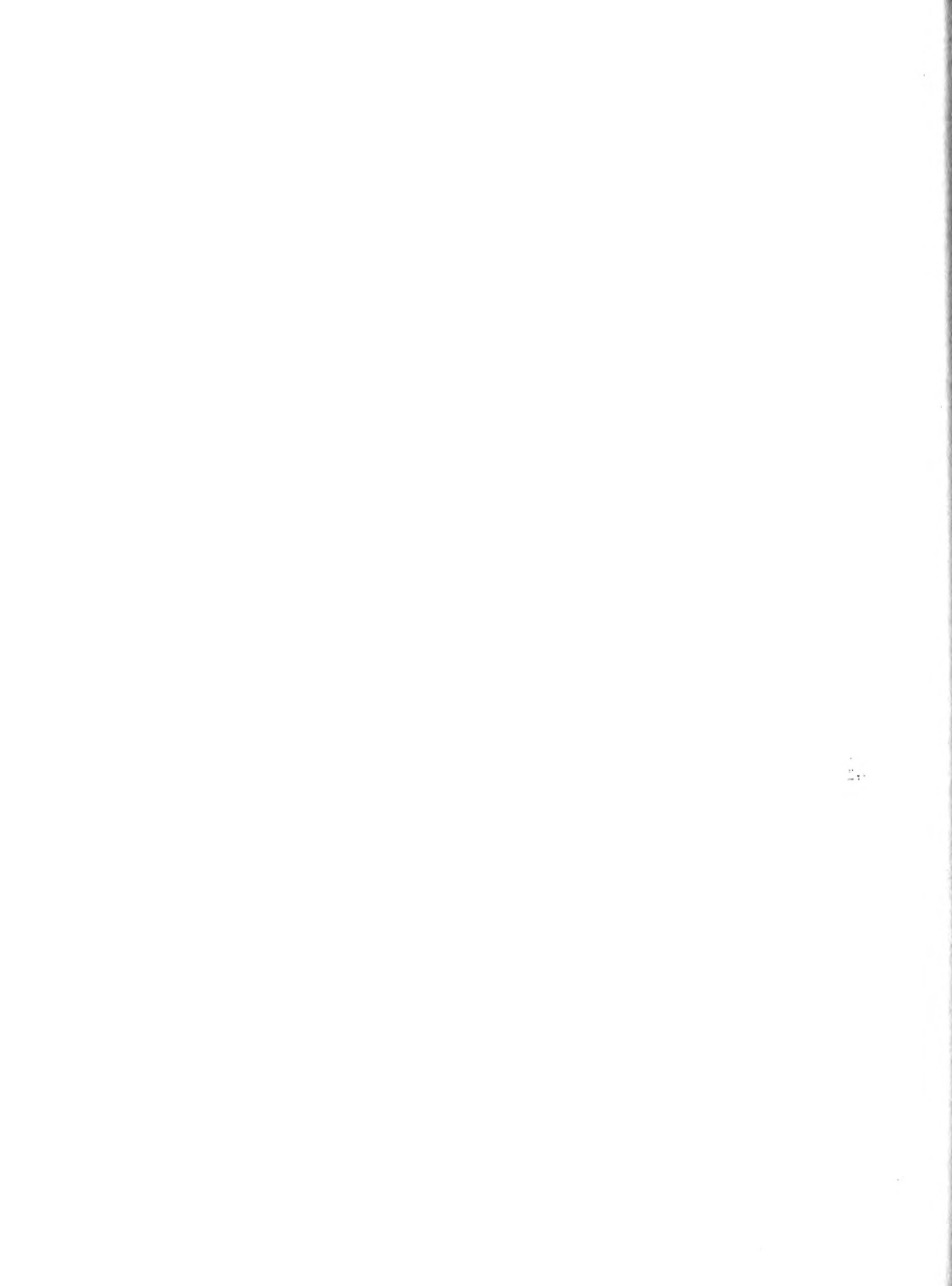
Based upon research done by the Montana Department of Highways on energy-induced needs for road improvements, it was determined that approximately 172 miles of reconstruction and 48 miles of new construction are considered vital to the development of the Circle West Project proposal.<sup>1</sup> The sections of McCone County roads likely to be most impacted during the construction phase of the proposed development are: (1) FAP 57 (Highway 200); (2) FAP 42 (Highway 24 extending from Flowing Wells to Glasgow); (3) FAS 252 (Circle to Weldon road); and (4) additional county roads linking the plant site with the existing road system. These sections of road would probably require reconstruction in order to accommodate the anticipated increases in traffic.

The distances involved in travel to the probable development location from points in McCone County and surrounding areas are substantial. The approximate distance from the proposed plant site to Circle is 46 miles via Highways 200 and 24, and 20 miles via the Horse Creek road. The site is more than 20 miles from Brockway and 70 miles from Glasgow. Since most construction workers would reside at the construction site, substantial traffic would be encountered over numerous miles of county roads, and costs involved in maintaining the roads would increase.

Numerous miles of additional road are necessary to make the plant site more accessible and connect it with the existing road system. It is logical to assume that connections from Highways 24 and 200 and the Circle-to-Weldon road (FAS 252) would be constructed. Additional roads constructed on the private property being developed would not become the responsibility of the County unless they were deeded over to the County.

Any development on the perimeter of Circle or in the remainder of McCone County would be subject to guidelines relating to road and street development set down in the Subdivision Regulations employed by the County. Increased development in Circle and Brockway is expected during the operational phase of the proposed facilities evaluated in Scenario No. 3. As a result, some road or street improvements (street paving) will be necessary at that time. Only minor impact on the local road system is expected during the development of the small coal mine. Therefore, improvements needed in the towns of Circle and Brockway should be negligible (except for normal maintenance requirements). The major impact during this scenario would be felt on the Federal Aid System roads and on several roads now maintained by the County (those roads which will be the "local" link on the road system between the mine site and the towns).

<sup>1</sup>"Montana's Highway Needs Related to Hauling Energy Resources and Other Energy Induced Needs", Montana Department of Highways Planning and Research Bureau, December, 1976.



A stylized, high-contrast illustration. In the upper left, two wheat stalks with oval-shaped grains curve upwards. Below them, a barbed wire fence runs across the frame. The fence is composed of several strands of wire with sharp barbs, supported by vertical wooden posts. The ground is represented by a series of parallel diagonal lines, suggesting a field or tilled earth. The overall style is graphic and minimalist.

## **CHAPTER VII**

# **LAND USE PLAN**



CHAPTER VII  
LAND USE PLAN

1. GENERAL

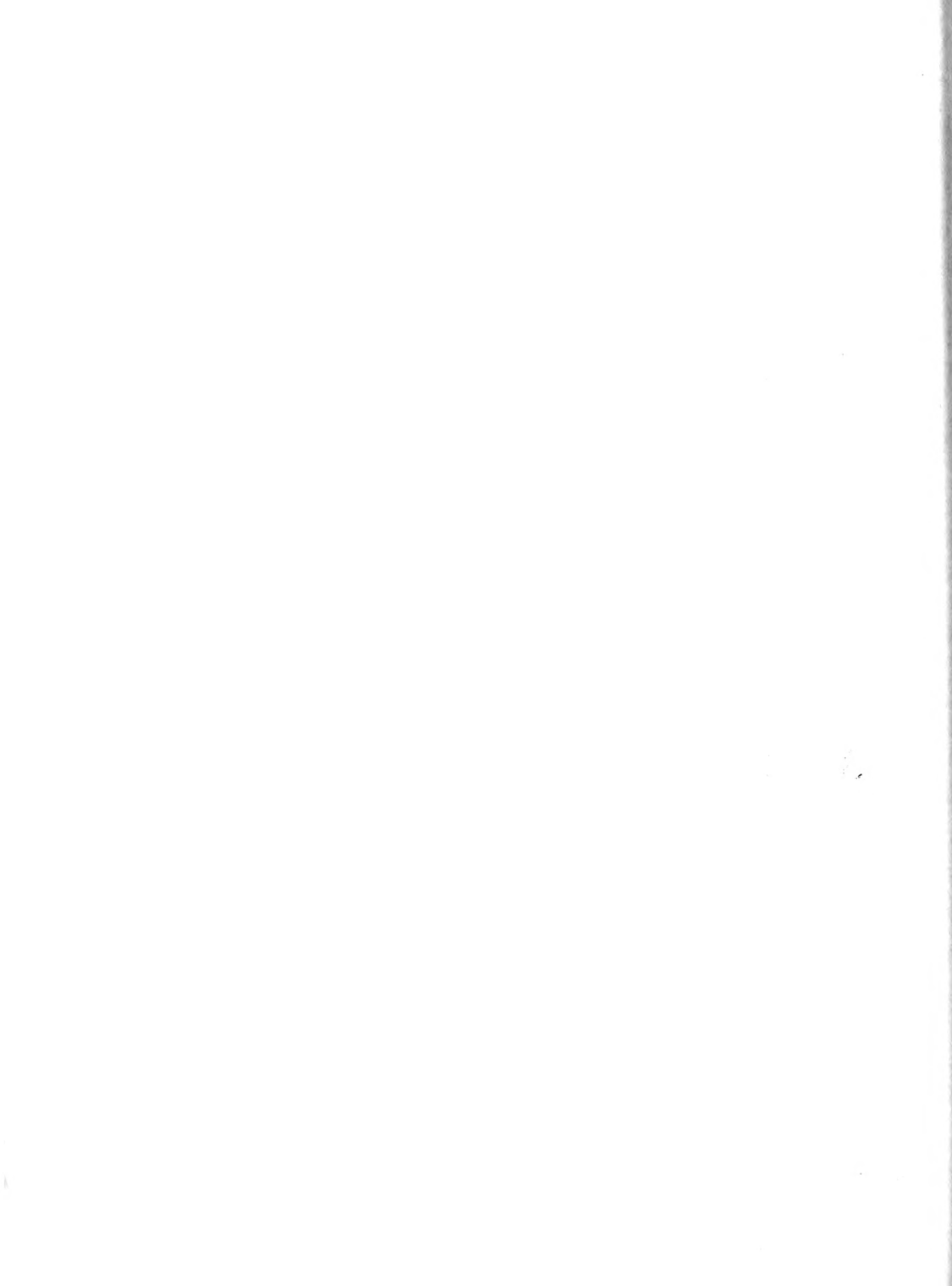
An evaluation of the data and recommendations presented in the preceding chapters shows that there is a need for additional land allocation for residential areas, parkland and commercial development. Recommended locations for these uses as well as public and industrial land are indicated on the land use plan maps which provide a basis for future land use decisions made by the governing body. These maps represent the culmination of a series of analyses and assumptions utilized by the consultant and the planning board throughout the process of the plan development. Existing demographic and physiographic data, including population, housing, economics, soils and flood plains, etc. were considered in the plan, as were projections of housing and community facilities needs. Overall, the land use plan, as presented here, is a reflection of the policy of the planning board (which is commensurate with the goals and objectives set forth through the process of public input) and is based on sound planning principles adapted to the special situation confronting McCone County.

The areas set aside for future development should provide adequate space for the indicated land use classifications through the end of the long-range planning period (1978-2000). Enough land has been allocated to accommodate the needs of the highest probable impact situation (Scenario No. 3 - Alternate 2). However, it is also possible that only one of the smaller coal development projects will be implemented during this time period. In this event, the plan discussed on the following pages does not become inappropriate, but rather becomes a plan for some future date beyond the turn of the century. Since the principles and policies used in preparing the plan remain unchanged for all scenarios, the desired pattern of development would also remain unchanged. Therefore, future growth in McCone County should be guided in the direction indicated herein.

It is an important consideration that because the plan is based on forecasts assuming, in part, a continuation of past trends, it should be viewed as a flexible document subject to periodic evaluation. If some unforeseen circumstance occurs, the plan should be adjusted accordingly.

2. McCONE COUNTY

Land use changes likely to take place in the county are predicted to be limited to the Circle and Brockway areas with a slight increase in activity in the vicinity of Fort Peck Reservoir and the Missouri River. All other areas of McCone County should experience a no-growth situation as indicated through an evaluation of past trends.

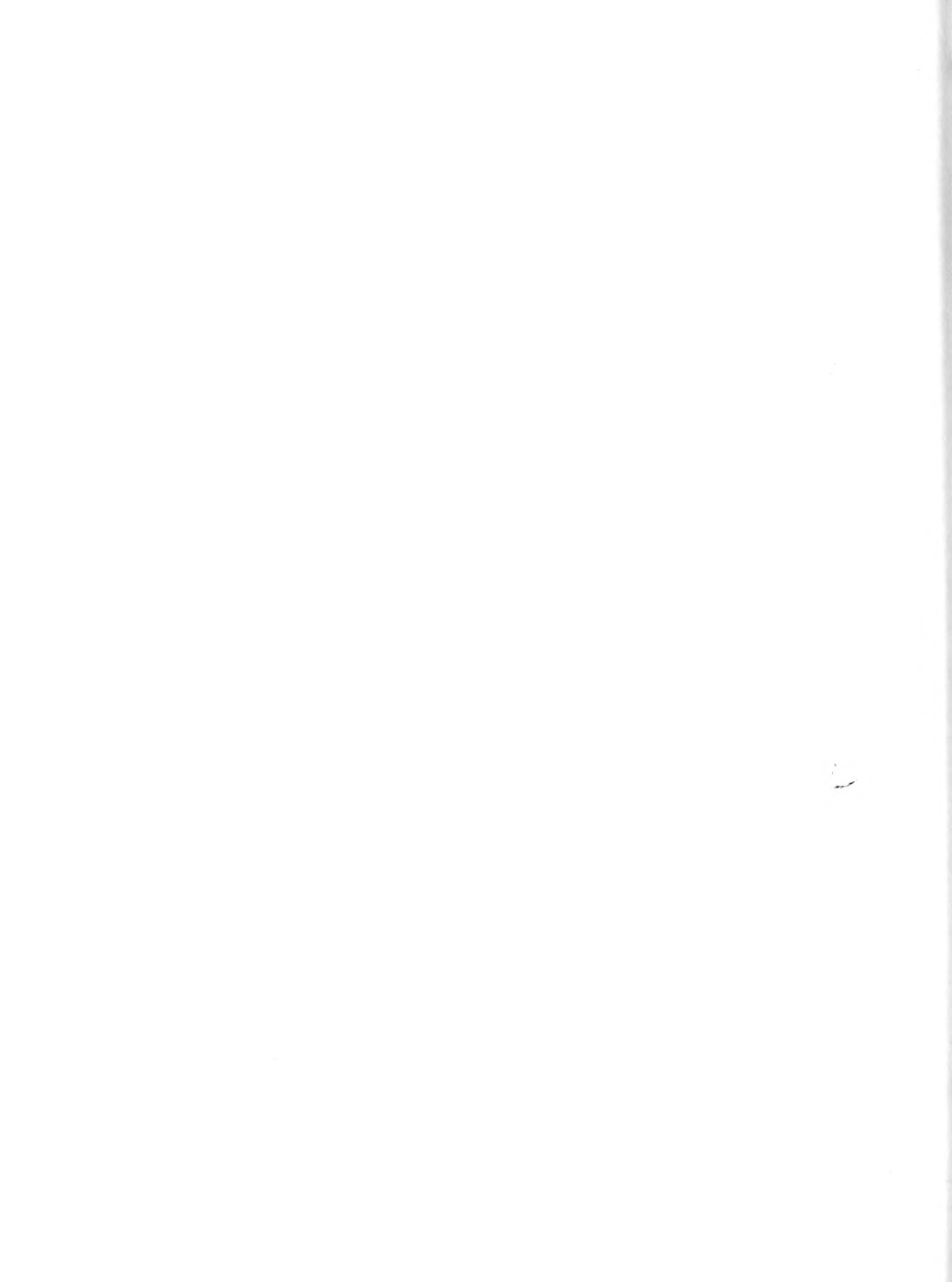


The Land Use Plan map for McCone County, which is Figure 12, shows that virtually all of the rural area should be reserved either for agricultural purposes or maintained in its natural state as open space. Future suburban developing areas of the county are indicated as color insets on the map (Circle and Brockway) and detailed plans are discussed in the following section of this chapter. These plans present the recommended pattern of future development in their respective areas.

Although the town of Vida is not anticipated to be impacted by any of the growth prospects for the county, it is nevertheless considered a minor population center and will probably maintain its present character in the future. As mentioned in the Inventory and Analysis Report, the existing development pattern is nearly all residential. There is a school and post office located in the town and the only commercial use (other than farm-related) is a bar. Since little or no population increase is predicted to occur here in the future (a fact substantiated in the preparation of population projections), it is senseless to include a plan map in this report. It is sufficient to say that, in order to maintain the intent of the Land Use Plan for McCone County, development which would change the rural nature of the community should be discouraged. This would include residential subdivisions outside of the platted area of the town, but would exclude farm-related dwellings.

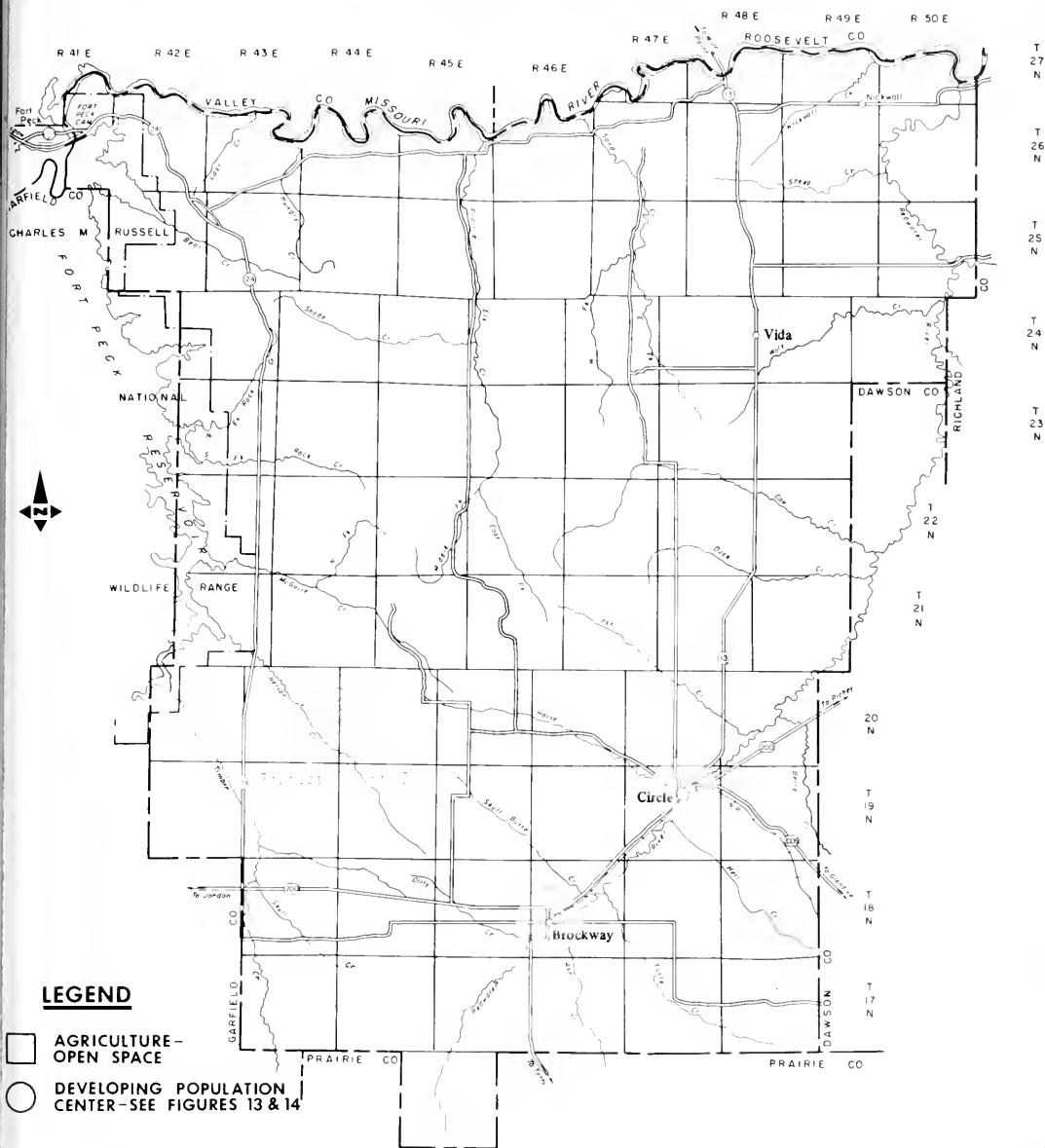
It should be noted that the primary intent of the plan is to encourage proliferation of agricultural pursuits in the outlying areas of the county, and to direct other development to the Circle and Brockway areas where community services can be provided in the most efficient manner. This is not to say that absolutely no new residential development should occur outside of these areas, but simply that proposed "major" developments, such as those subject to review requirements in the subdivision regulations, should be carefully considered before being approved or disapproved by the governing body. This type of review process is seen as the primary tool in guiding development in the Missouri River - Fort Peck area and in maintaining the rural nature of the Vida area.

The general location of the proposed mine site is also shown in Figure 12 and is included for informational purposes only. New construction for residential or commercial purposes is discouraged in the general area except for such facilities as may be provided "on-site" by the project developers. At the time of publication of this report, concrete plans had not been submitted delineating plans for a "company town" at this location. It has been suggested, however, that temporary housing for construction work forces may be located here.





# McCon County



## McCon County Comprehensive Planning Program Land Use Plan

FIGURE 12



### 3. DEVELOPING AREAS OF THE COUNTY

As mentioned in Chapter IV, population growth in McCone County will most likely be limited to the towns of Circle and Brockway with a minor increase taking place in the vicinity of Fort Peck Reservoir and the Missouri River.

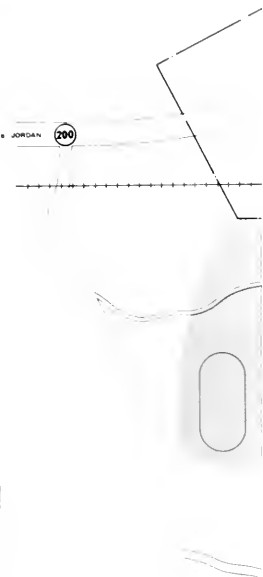
The Land Use Plan for Circle is based upon predictions of demand for housing and community services through the turn of the century and includes adequate land area for a population in excess of 2,500 persons (Scenario No. 3). The recommended pattern for future land development in the Circle area is shown in Figure 13. Land use classifications selected for the plan are color-coded areas representing land for RESIDENTIAL, COMMERCIAL, PUBLIC & SEMI-PUBLIC, PARKLAND, INDUSTRIAL, and AGRICULTURE-OPEN SPACE purposes. A discussion of the implications of each category as it applies to Circle is presented as follows:

#### **-RESIDENTIAL-**

- ☐ **Medium Density Residential:** Single family conventional construction housing and multi-family housing with three units or more should be the predominant form of development. Mobile home parks are not permitted, but single mobile homes on permanent foundations are allowed.  
Individual lots should be no smaller than 5000 square feet per single family unit and development should not exceed a density of 15 dwellings per acre for multiple-family housing projects.
  
- ☐ **Low Density Residential:** Primarily single family conventional construction housing with an allowance for duplex multi-family units. Only designated areas (through implementation of a zoning ordinance) allow mobile home park development. Single lot mobile home development is not permitted.  
Individual lots should be no smaller than 7000 square feet, or a maximum mobile home park density of eight units per acre.

Approximately 71 acres of land is shown on the map for medium density residential development. Most of the land in this category is in the old residential district of town. Consequently,







# CITY OF CIRCLE



## McCone County Comprehensive Planning Program Land Use Plan



FIGURE 13





a relatively small proportion of this land is presently available for residential expansion. Vacant land area in this part of the city totals 10 acres, providing adequate space for about 50 new housing units, depending on the percentage of multi-family housing units constructed. The area is currently serviced by four-inch or six-inch water mains (see water system map in Chapter V) and six-inch or eight-inch sewer mains (see sewer system map in Chapter V). Preliminary indications are that these distribution and collection systems would not require major renovation to service the additional population in the medium-density residential area. However, some of the main lines passing through the district to new development which may occur on the perimeter of the city would have to be upgraded when that development takes place. Other utility system improvements which will be needed are summarized in Chapter V.

The low-density residential area is shown in the perimeter areas of the city with the majority of the activity predicted to occur on the western edge of town. Substantial future residential development could also take place in the eastern and, to a lesser degree, on the northern and southern sides of town. Total vacant land shown in this classification is 188 acres, 75 percent of which is assumed to be developable land. Therefore, approximately 370 new housing units could be built in this area if 30 percent of the land were planned for streets and alleys.

Major restraints to future use of the land in the vicinity of Circle were considered before designation of new residential areas. The flood plains of Horse Creek and the Redwater River were the primary limitations and inadequate soils for residential development were also considered in the process. It should be noted that the data used for analysis of the physical characteristics of the area is general in nature and can only be used for general recommendations. Therefore, some of the area indicated for future development may contain isolated segments of undesirable land. An allowance has been made for this factor in determining total land area needed to place the maximum projected population level. As a further note of caution in interpretation of the plan map, soils data showed severely limited land capability in the vicinity of the water tank and westward along Mayberry Road. However, because of other desirable attributes, including suitability for utility extension and moderately rolling topography, the area is considered desirable future residential land. Final determination for suitability should be made at the time of specific subdivision proposals.

Land Requirement figures through the turn of the century are shown in the following table for Circle. The acreage calculations reflect housing demand assumptions and totals indicated in Chapter IV. Detail for each scenario by short- and long-range planning period is included in Appendix B.

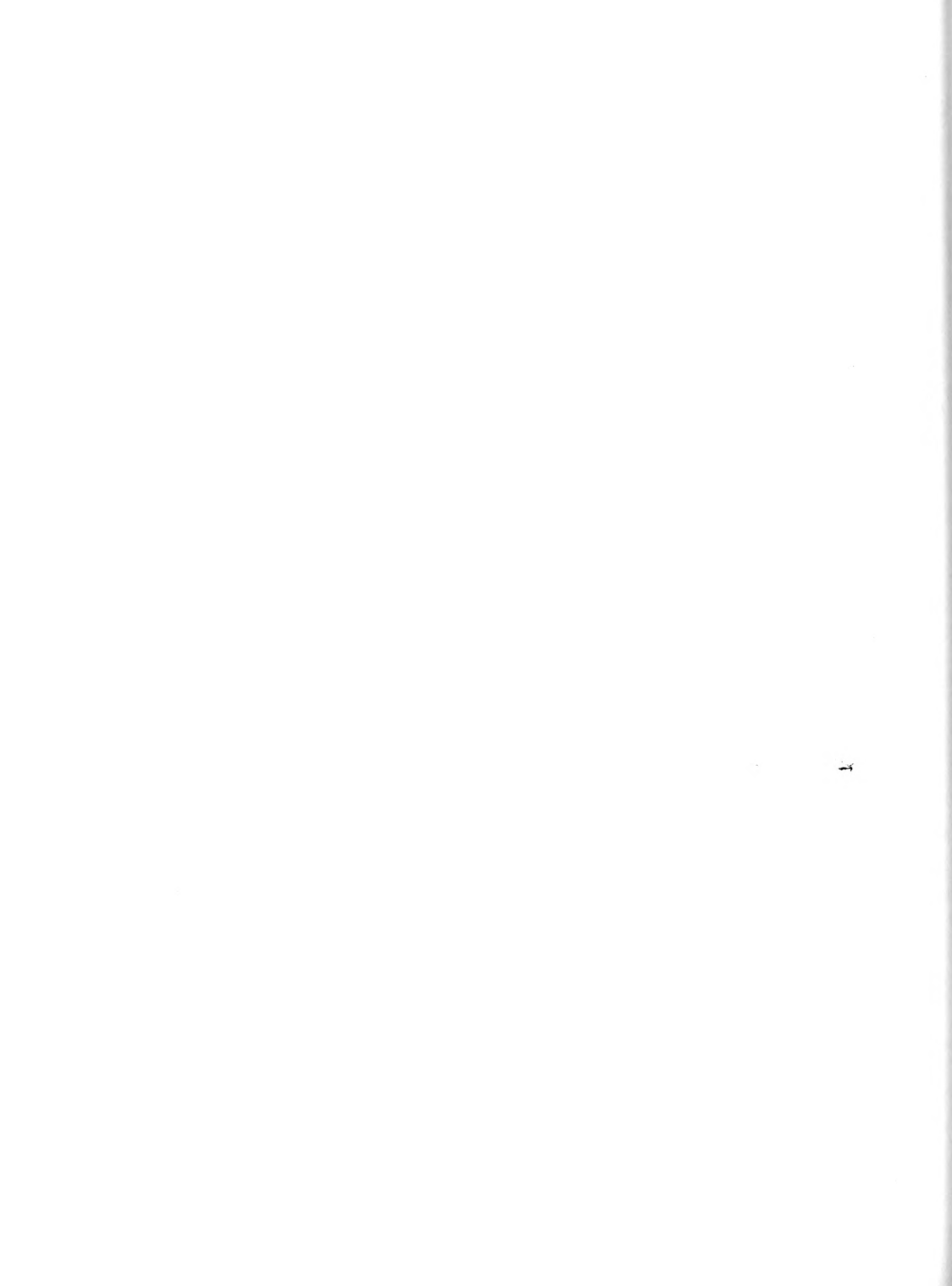


TABLE VII-1

CITY OF CIRCLE  
LAND USE REQUIREMENTS  
BY TYPE OF HOUSING UNIT  
(1978-2000)

Type of Housing	ADDITIONAL LAND AREA IN ACRES			
	Development Scenario			
	1	2	3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2 (Coal Gasification)
Single Family	23.5	28	38.5	41
Multi- Family	1.3	3.2	11.7	13.7
Mobile Home	2.8	16.2	45.6	52.2
TOTAL—	27.6	47.4	95.8	106.9

The demand indicated in the above table can be easily satisfied within the residential areas on the Land Use Plan map. The provision of central sewer and water service to these sites is extremely important and should be the most critical factor in determining approval or disapproval of subdivisions which are proposed for the area. It should be a relatively simple matter to design sewer and water systems to accomodate the needs of additional population in the area east of Railroad Avenue; however, the matter becomes more complex in areas which will probably be developed on the western and northern edges of Circle. Because of the cumulative effect of adding these areas to the existing systems, some upgrading may be necessary on the downstream side of the water supply and sewage collection mains. A final determination should be made through an engineering study prior to acceptance of major development. The capacity of the existing systems and future improvements are discussed in the Community Facilities Plan.



## —COMMERCIAL—

According to data collected during the inventory phase of the planning project, there are about 13.5 acres of commercial land within the city limits of Circle. Although planning standards suggest that the town has more than adequate commercial land for the population served, it is probable that this is an incorrect assumption for the following reasons. First, standards are based on the typical development patterns in large urban areas, not small rural communities in sparsely developed parts of the country. Second, information obtained from McCone County residents in a planning questionnaire distributed in 1979 showed a significant desire for more retail services in the county. In view of the fact that more development of this type is already needed, and because expected population growth will create a new demand, additional land has been designated on the plan (Figure 13).

Generally speaking, the recommendation for future commercial development is that expansion should take place on vacant land in or near the existing central business district. Some vacant parcels are presently available, but some of the land scheduled for commercial use is now residential. Conversion of these parcels to commercial use could not take place until the existing use is either scheduled for change by the owner or vacated. Therefore, the total commercial area presently considered available in the vicinity of Main Street and First Avenue is relatively small (about two acres).

Other commercial expansion should be directed to the area near the intersection of Highways 200 and 13. Analysis of traffic volume data shows that, excluding the Main Street intersection with Highway 200, this location experienced the most significant increase in activity in recent years. Therefore, since the area is desirable for commercial use, additional land has been recommended for development near the intersection in the future. Approximately two acres are currently vacant and could be used for retail or wholesale purposes relatively soon. Preservation and/or conversion of other land shown in red on the map will be adequate to place all but the most land-extensive commercial establishments. These uses (such as farm implement and car dealerships) are encouraged to locate along the highway corridor near existing establishments of this type. However, "leap frog" development caused by indiscriminate location of new buildings is discouraged.



## —PUBLIC AND SEMI-PUBLIC—

Governmental buildings, schools, churches, libraries, hospitals, museums and fraternal organizations are the most common uses included in this category and require a great deal of land for efficient operation. Currently there are about 24 acres in the City of Circle used for these purposes and, according to the analysis included as part of the community facilities plan, no additional parcels of land will be needed if "base line" conditions are maintained throughout the planning period. It is clear, however, that more land will be needed if either of the coal gasification alternatives evaluated become a reality.

Planning methodology for future public facilities is shown in Chapter V of this report. The adequacy of each facility to meet existing and projected needs is discussed in the text of that chapter and the expansion needs indicated there are related to the land use plan through land allocations provided for on the plan map. Specific needs as they affect future use of the land are explained in the following discussion.

- ☐ At the beginning of construction of coal gasification facilities, five classrooms should be added to meet Circle Elementary School needs. Also, although standards indicate the contrary, it is anticipated that the High School will have to be expanded at that time. Land necessary for new construction of school facilities should be provided on the west end of town on land shown in yellow for future low density residential use. Because of the compatibility of residential and school development, there does not appear to be a need for designation of public land in the area on the plan map. If a zoning ordinance were eventually put into effect for the area within one mile of the city, and this area were zoned as low-density residential land, then schools or other public uses would be allowed as a conditional use, consequently maintaining the intent of the land use plan.
- ☐ It is evident that the library should be expanded as soon as possible to provide adequate meeting capacity. Standards show that an additional seven chairs are needed to service the existing County population and that as many as 23 more should be added by the year 2000 if Scenario No. 3 - Alt. 2 is implemented. There is sufficient land around the existing building for expansion.
- ☐ More office space will be needed for city personnel if a coal gasification plant is constructed. New offices which will be included in the front of the city garage facility will satisfy part of this demand, but additional expansion will be needed for law enforcement purposes. Public parking demand will also increase significantly if the population increases to Scenario No. 3 levels. Recommended parking areas are shown in blue on the map just east of the Vets Club and on the corner of Idaho Street and First Avenue. Any building expansion should take place on the same block as the existing city-county building. See the community facilities chapter for further discussion.
- ☐ More hospital beds will be needed if any coal development takes place in the county. Also, it is obvious that, in order to meet hospital care standards and because of the size and condition





of the existing building, plans should be made to expand the hospital as soon as possible. The new facility should be located at the nursing home site which is shown in blue on the land use plan map.

#### —PARKLAND—

An explanation of parkland recommendations is included in Chapter V. For the town of Circle it is noted that, although total park area slightly exceeds recommended design standards, there is a need for additional development on the north and west ends of Circle. The recreational demand (which includes part of the impact created by coal development) could be met by making parkland improvements on the areas shown in green on the Land Use Plan map. Three possible areas are shown on the banks of Horse Creek on Circle's north side and a new park has been set aside on the Hilstad Heights subdivision on the south side. The following is a summary of recommendations for Circle: (See the Community Facilities Plan for further discussion)

- ☐ SITE 1, which is currently in the final planning stage, should be completed as soon as possible. Over two acres of park and play area will be located here.
- ☐ SITE 2 and SITE 3 are possible parkland sites which could be constructed concurrently with additional population growth created by mining and processing of coal resources. Improvements could be made in one or the other of the proposed locations. The most desirable in terms of service area and demand is SITE 3.
- ☐ SITE 2 is composed of approximately four acres as shown on the map. Because of the steep embankment on the east side of the creek, direct vehicular access could only be obtained through construction of an access off of Wibaux Street. Pedestrian access is possible from Valley Street if parking is provided on the east bank.
- ☐ SITE 3 is composed of approximately 4.5 acres as shown on the map. Vehicular access could be obtained from the north side of the Meridian Avenue bridge.
- ☐ The Ben Larson Park should be improved as residential development in the Hilstad Heights subdivision increases.
- ☐ Parkland in outlying residential areas of Circle (shown in light yellow on the map) may be needed, depending on the exact type and density of future development. Parkland needs should be considered by the planning board on a piecemeal basis as subdivision proposals are submitted.

#### —INDUSTRIAL—

The railroad corridor which divides the northwest and southeast sections of Circle provides ample space for industrial activities in the area. The existing uses are primarily agriculture-oriented (grain elevators, stockyards, etc.) and are located on the Burlington Northern right-of-



way between Custer and Colorado Streets. Only 8.1 acres of land in this area are currently being utilized for industrial purposes and, according to estimates based on aerial photo interpretation, there are approximately 15 additional acres which could be developed in the general area and southward within the city limits. Because of the obvious advantage of centralized industrial growth near major transportation facilities, it is recommended that this trend be continued. The area is shown in gray in Figure 13.

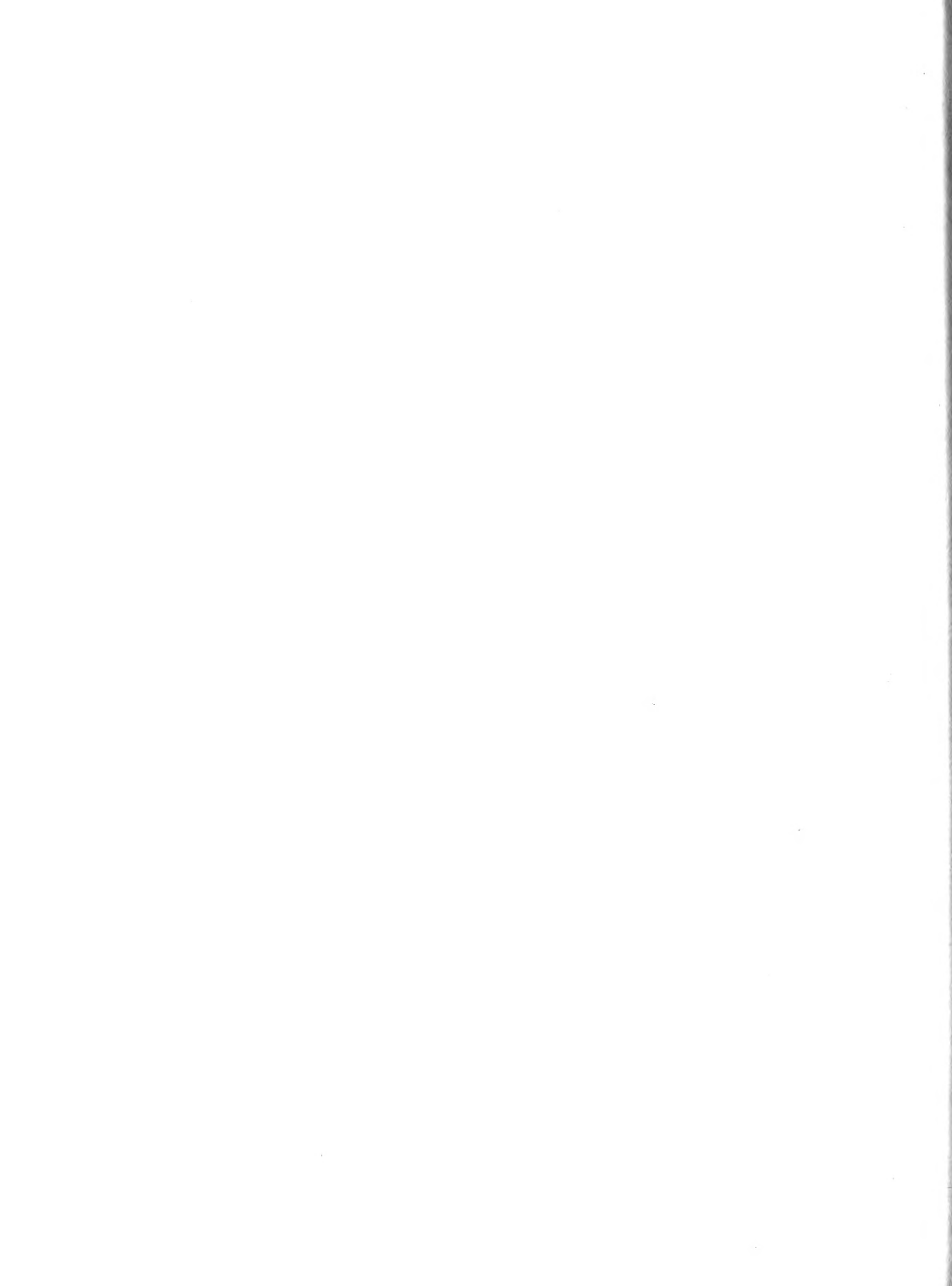
#### —AGRICULTURE-OPEN SPACE—

Areas not shown in color are intended to be preserved as open space or utilized for agricultural purposes. Any proposed future changes in the use of this land should be closely examined by the Planning Board before a recommendation is made to the governing body.

The Land Use Plan for Brockway is shown in Figure 14 and was developed to include adequate land area to place a population in excess of 380 people (maximum impact during Scenario No. 3). The probability of significant growth taking place in the town before that time (probably the late 1980's) is very slight. However, because the plan is based on principles which promote compatibility of future use of the land whether or not coal projects are implemented, the pattern of development recommended here should be pursued. A general summary of the plan for Brockway is presented in the following paragraphs.

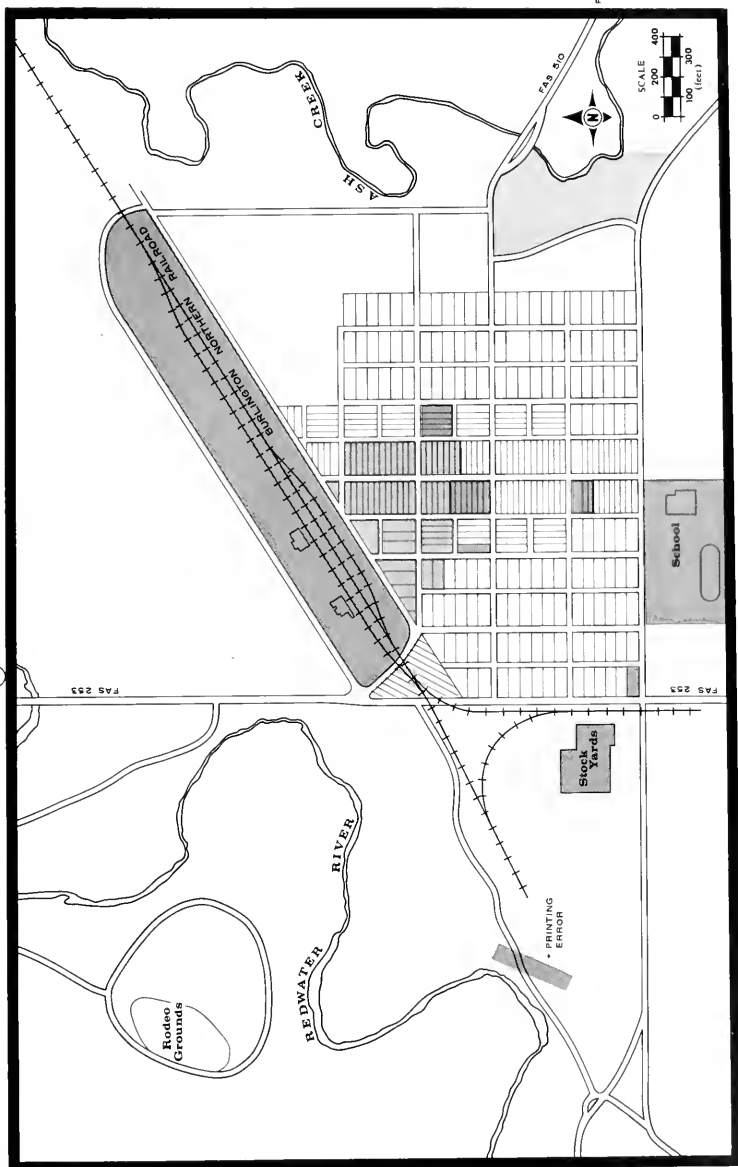
The categories selected for designation of future residential land in Brockway are for areas of medium and low density development. The descriptions of uses which should be permitted in these districts are identical to those shown for residential land in Circle. According to population estimates of maximum impact in Brockway, there will be 380 persons in the town by the year 2000, which would require an additional 102 permanent housing units in the community. Acreage needed for future residential use would then total approximately 25 acres, a demand that can easily be met in or near the existing platted area. The expansion area is shown on the Land Use Plan map for Brockway and includes a total of 35 additional acres. A breakdown of land requirements by type of housing unit is shown in Table VII-2.

All other categories of land use are also indicated on the Land Use Plan map. Commercial and public expansion needs are provided for by additional land preserved in the north central part of town and the need for parkland in that area is also shown on the map. A large parcel of parkland would also be desirable in the vicinity of Ash Creek south of F.A.S. 510. Parkland and other community facilities needs are discussed in detail in Chapter V.



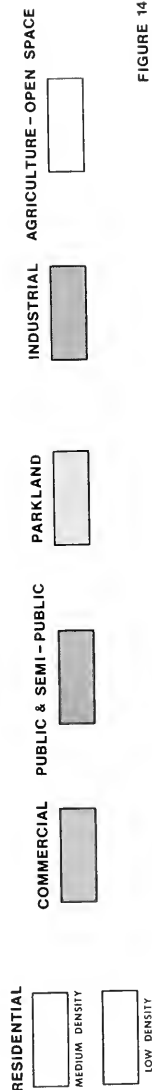
# TOWN OF BROCKWAY

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## McCone County Comprehensive Planning Program Land Use Plan





Future development in the Brockway area is also subject to limitations imposed by floodwater, soils and topography. Investigations show that the only area severely limited by these factors is the land in the immediate vicinity of Ash Creek and the Redwater River. Maps kept in the McCone County planning office show the floodplains of these two streams.

TABLE VII-2  
TOWN OF BROCKWAY  
LAND USE REQUIREMENTS  
BY TYPE OF HOUSING UNIT  
(1978-2000)

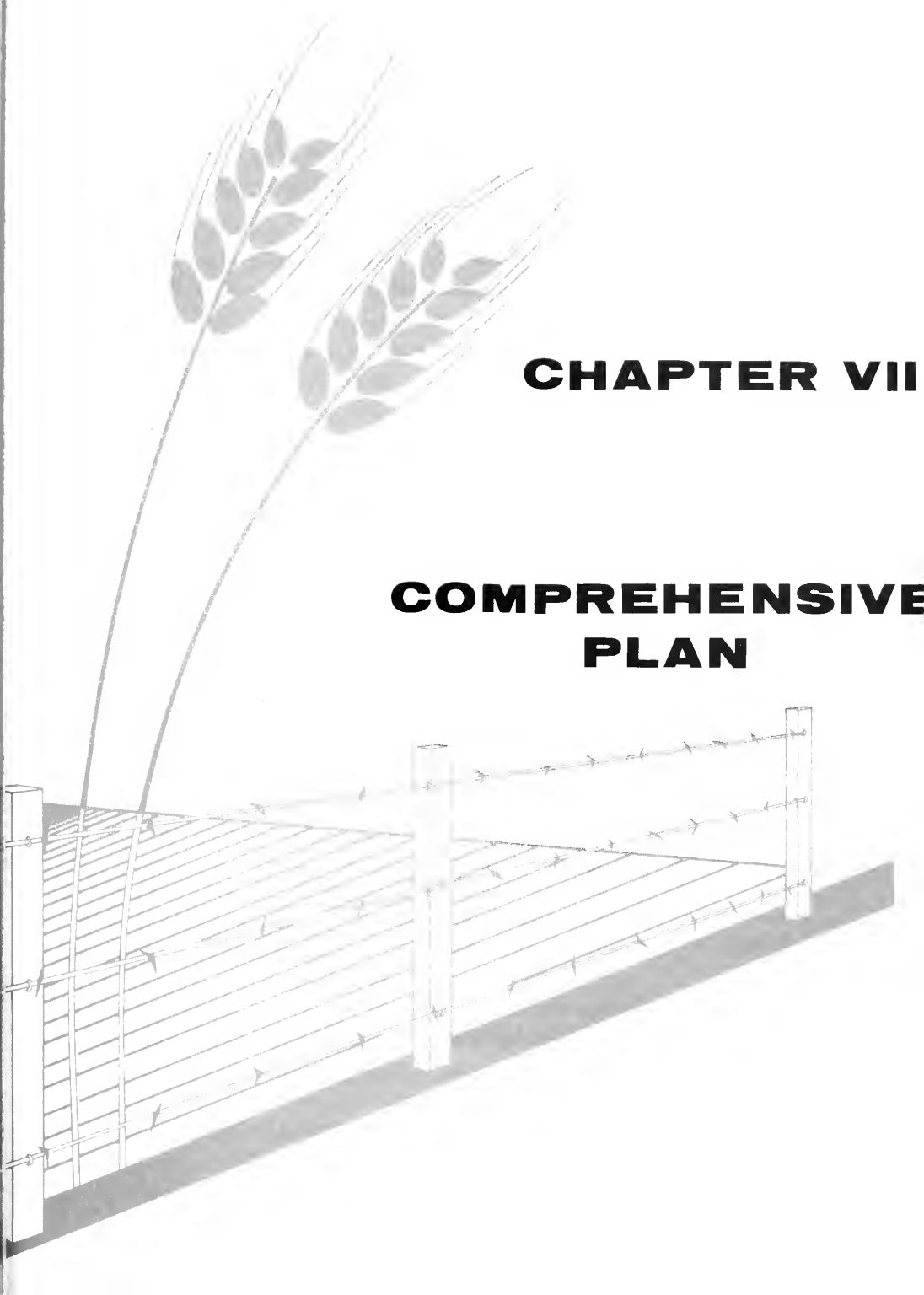
Type of Housing	ADDITIONAL LAND AREA IN ACRES			
	Development Scenario			
	1	2	3	
	(Base Line)	(Small Coal Mine)	Alt. 1 (Electric Generator)	Alt. 2 (Coal Gasification)
Single Family	0	1.5	9	8.5
Multi- Family	0	.9	2.7	3.4
Mobile Home	0	3.8	10.6	13
TOTAL—	0	6.2	22.3	24.9





## **CHAPTER VII**

# **COMPREHENSIVE PLAN**





## CHAPTER VIII

### COMPREHENSIVE PLAN

The needs which accompany normal population growth, and those which may arise due to rapid growth conditions associated with coal mining and processing have been discussed in considerable detail in the preceding chapters. Knowing these needs (or at least a good approximation of what they would be ), it is possible for the county to prepare for physical and financial responsibilities it will encounter in the future. The total physical effect of future population on housing, community facilities, transportation systems, and the use of the land partially determines the shape of the document which is used as a plan to guide development. A statement of policy or goals and objectives and the application of sound planning principles are the other ingredients necessary prior to the final draft of the Comprehensive Plan report. Obviously, then, the Comprehensive Plan is the collective consideration of all the recommendations for future development which have been previously mentioned. Although it would be necessary to consider the entire report prior to application of these recommendations, the following summary is presented for convenience for those desiring a brief overview of major elements of the plan.

- ☐ Projections developed by the consultant show that the population of McCone County will exceed 3,500 people by the turn of the century if no coal development occurs. The population could reach a high of 5,000 if a coal gasification plant is constructed
- ☐ Demand for housing and community facilities will be highest in the town of Circle for all development scenarios.
- ☐ Only 69 additional housing units will be needed in Circle by the year 2000 if the recent trend continues. Coal development could create a maximum additional demand of 427 housing units for that time period.
- ☐ In the town of Brockway, implementation of the maximum coal development alternative would create a need for 102 additional housing units by the year 2000. This is approximately four times the existing supply.
- ☐ Additional classroom space will be needed in Circle and Brockway elementary schools if a coal electric generating or coal gasification project takes place in the vicinity of Dreyer Bros. Ranch. It is probable that the high school will also need expansion at that time.
- ☐ There is a need for jail facilities in the county at the present time. The situation would become critical if Scenario Number 3 coal projects were implemented.
- ☐ The county hospital should be expanded to meet the needs of the future population. Improvements are needed now on the Circle sewerage system. The water system is adequate to meet existing demand, but improvements to the supply system would be

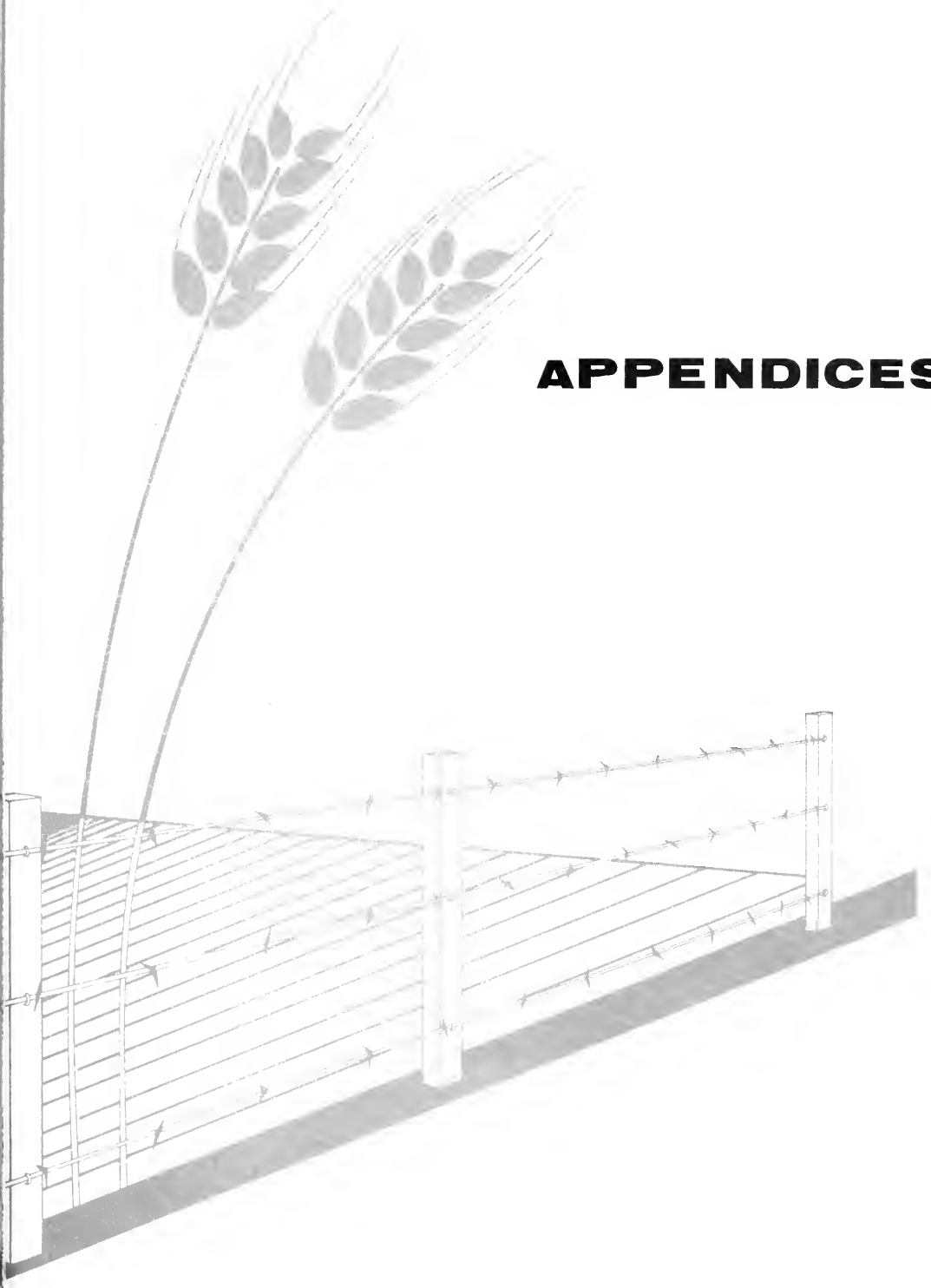


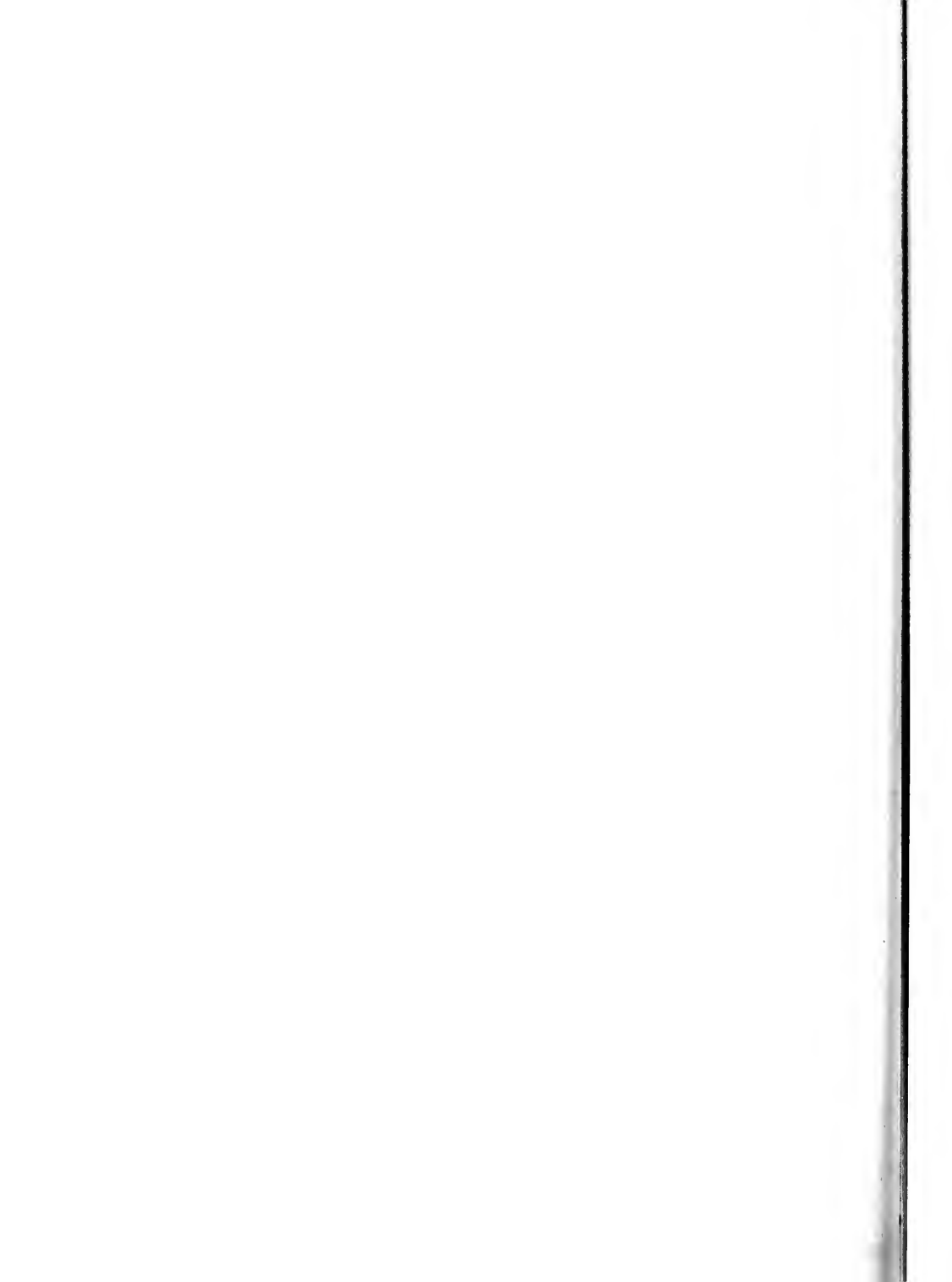
necessary when Scenario Number 3 projects are constructed.

- ☐ Brockway would need a central sewer system if maximum coal impact is experienced. A central water system may also be needed (depending on soils testing results).
- ☐ Airport improvements recommended in the Airport Master Plan should be made as soon as possible.
- ☐ Road construction standards should be adopted for the county and a priority ranking system for maintenance should be implemented.
- ☐ Prime agricultural land in the county should be preserved. Urban-oriented expansion should be directed to areas where community services can be provided efficiently.
- ☐ Expansion in or near the towns of Circle and Brockway should be guided to areas shown on the land use plan maps.
- ☐ Tools for implementation of the plan should be utilized as soon as possible. For more information regarding implementation, refer to the report entitled "McCone County Comprehensive Plan - Implementation".



# APPENDICES







## APPENDIX A



## APPENDIX B



# McCONE COUNTY

## PROJECTED LONG TERM ELEMENTARY AND SECONDARY SCHOOL REQUIREMENTS

Development Alternative	Estimated Additional Enrollment	Elementary	Secondary
<u>Scenario Number 1</u>			
1978 - 1985	8	5	3
1985 - 2000	18	12	6
TOTAL -	26	17	9

### Scenario Number 2

1978 - 1985	110	72	38
1985 - 2000	20	13	7
TOTAL -	130	85	45

### Scenario Number 3 Alt. 1

1978 - 1985	188	122	66
1985 - 2000	168	109	59
TOTAL -	356	231	125

### Scenario Number 3 Alt. 2

1978 - 1985	8	5	3
1985 - 2000	406	264	142
TOTAL -	414	269	145



McCONE COUNTY

PROJECTED PEAK  
ELEMENTARY AND SECONDARY SCHOOL REQUIREMENTS

Development Alternative	Estimated Change In Enrollment	Elementary	Secondary
Scenario Number 3			
Alt. 1			
1978 - 1985	+188	+122	+66
1986	+1009	+656	+353
1987	-534	-347	-187
1988	-327	-213	-114
TOTAL -	+336	+218	+118
Scenario Number 3			
Alt. 2			
1978 - 1985*	+8	+5	+3
1986	+864	+562	+302
1987	+2	+1	+1
1988	-481	-313	-168
TOTAL -	+393	+255	+138

- \* For tabulation purposes the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978 - 1985 planning period.





McCONE COUNTY SOLID WASTE ASSUMPTIONS  
CIRCLE LANDFILL SITE

- ☐ There are 10 acres remaining at the site.
- ☐ Average depth of site is 15 feet.
- ☐ Solid waste/cover material ratio is 4:1.
- ☐ Solid waste in-place density is 500 lbs./cu. ft.

TOTAL VOLUME OF SITE IS:

$$\frac{10 \text{ acres} \times 43,560 \text{ S.F.} \times 15 \text{ feet}}{27} = 242,000 \text{ C.Y.}$$

QUANTITY OF WASTE:

$$\frac{242,000 \text{ C.Y.} \times 500 \text{ lbs.}}{\text{C.Y.}} \times \frac{\text{Ton}}{2,000 \text{ lbs.}} = 60,000 \text{ Tons}$$

- ☐ Assume 25 percent is soil  $\approx$  46,000 Tons of Waste.



## HOUSING AND LAND USE PLAN

### 1. Residential Requirements - Land Allocation

#### ASSUMPTIONS

A. Based on a number of variables - including distance, availability of facilities and land capability - housing will be distributed according to the following percentages:

70% to Circle

20% to Brockway

10% to Missouri River Area (Fort Peck)

B. Housing types needed to alleviate the anticipated permanent demand are distributed based on adjusted percentages shown in the 1978 housing survey. Mobile home demand is adjusted upward and single family figures are decreased accordingly. Construction and permanent housing demand are figured differently as follows:

#### Construction Housing

10% Single Family

20% Multi-Family

70% Mobile Homes

#### Permanent Housing

68% Single Family

12% Multi-Family

20% Mobile Homes

C. Acreages for each type of housing are figured as follows:

Single Family: .5 Acres/D.U. (22,000 sq. ft.)

Multi-Family: .17 Acres/D.U. (7,500 sq. ft.)

Mobile Home: .20 Acres/D.U. (8,700 sq. ft.)



**CITY OF CIRCLE FUTURE HOUSING REQUIREMENTS**

**SCENARIO NUMBER 1**

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	14	2	5	21
1985 - 2000	33	6	9	48
TOTAL --	47	8	14	69

**SCENARIO NUMBER 2**

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	24	21	71	116
1985 - 2000	32	6	10	48
TOTAL --	56	27	81	164

**SCENARIO NUMBER 3**  
Alternate 1

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	31	36	122	189
1985 - 2000	46	33	106	185
TOTAL --	77	69	228	374

**SCENARIO NUMBER 3**  
Alternate 2

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	14	3	4	21
1985 - 2000	68	78	260	406
TOTAL --	82	81	264	427



# TOWN OF BROCKWAY FUTURE HOUSING REQUIREMENTS

## SCENARIO NUMBER 2

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi-Family	Mobile Home	
1978 - 1985	3	5	19	27
1985 - 2000	0	0	0	0
TOTAL —	3	5	19	27

## SCENARIO NUMBER 3 Alternate 1

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi-Family	Mobile Home	
1978 - 1985	8	9	31	48
1985 - 2000	10	7	22	39
TOTAL —	18	16	53	87

## SCENARIO NUMBER 3 Alternate 2

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi-Family	Mobile Home	
1978 - 1985 *	0	0	0	0
1985 - 2000	17	20	65	102
TOTAL —	17	20	65	102

\* For tabulation purposes, the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978 - 1985 planning period.





# FORT PECK AREA FUTURE HOUSING REQUIREMENTS

## SCENARIO NUMBER 2

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	2	2	10	14
1985 - 2000	0	0	0	0
TOTAL —	2	2	10	14

## SCENARIO NUMBER 3

### Alternate 1

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985	4	4	16	24
1985 - 2000	7	5	8	20
TOTAL —	11	9	24	44

## SCENARIO NUMBER 3

### Alternate 2

Planning Period	TYPE OF HOUSING			TOTAL
	Single Family	Multi- Family	Mobile Home	
1978 - 1985 *	0	0	0	0
1985 - 2000	8	10	33	51
TOTAL —	8	10	33	51

\* For tabulation purposes, the construction period is assumed to peak in the middle of the three-year period (1986), thereby eliminating the misconception that all construction activity occurs in the 1978 - 1985 planning period.



**CITY OF CIRCLE FUTURE LAND REQUIREMENTS  
ADDITIONAL DWELLING UNITS**

**SCENARIO NUMBER 1**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	14	7	2	.3	5	1
1985 - 2000	33	16.5	6	1	9	1.8
<b>TOTAL</b>	<b>47</b>	<b>23.5</b>	<b>8</b>	<b>1.3</b>	<b>14</b>	<b>2.8</b>

**SCENARIO NUMBER 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	24	12	21	2.5	71	14.2
1985 - 2000	32	16	6	.7	10	2
<b>TOTAL</b>	<b>56</b>	<b>28</b>	<b>27</b>	<b>3.2</b>	<b>81</b>	<b>16.2</b>

**SCENARIO NUMBER 3  
Alternate 1**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	31	15.5	36	6.1	122	24.4
1985 - 2000	46	23	33	5.6	106	21.2
<b>TOTAL</b>	<b>77</b>	<b>38.5</b>	<b>69</b>	<b>11.7</b>	<b>228</b>	<b>45.6</b>

**SCENARIO NUMBER 3  
Alternate 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	14	7	3	.5	4	.8
1985 - 2000	68	34	78	13.2	260	52
<b>TOTAL</b>	<b>82</b>	<b>41</b>	<b>81</b>	<b>13.7</b>	<b>264</b>	<b>52.2</b>



**TOWN OF BROCKWAY FUTURE LAND REQUIREMENTS  
ADDITIONAL DWELLING UNITS**

**SCENARIO NUMBER 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	3	1.5	5	.85	19	3.8
1985 - 2000	0	—	0	—	0	—
<b>TOTAL</b>	<b>3</b>	<b>1.5</b>	<b>5</b>	<b>.85</b>	<b>19</b>	<b>3.8</b>

**SCENARIO NUMBER 3  
Alternate 1**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	8	4	9	1.5	31	6.2
1985 - 2000	10	5	7	1.2	22	4.4
<b>TOTAL</b>	<b>18</b>	<b>9</b>	<b>16</b>	<b>2.7</b>	<b>53</b>	<b>10.6</b>

**SCENARIO NUMBER 3  
Alternate 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	0	—	0	—	0	—
1985 - 2000	17	8.5	20	3.4	65	13
<b>TOTAL</b>	<b>17</b>	<b>8.5</b>	<b>20</b>	<b>3.4</b>	<b>65</b>	<b>13</b>



**FORT PECK AREA FUTURE LAND REQUIREMENTS  
ADDITIONAL DWELLING UNITS**

**SCENARIO NUMBER 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	2	1	2	.34	10	2
1985 - 2000	0	—	0	—	0	—
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>.34</b>	<b>10</b>	<b>2</b>

**SCENARIO NUMBER 3  
Alternate 1**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	4	2	4	.7	16	3.2
1985 - 2000	7	3.5	5	.9	8	1.6
<b>TOTAL</b>	<b>11</b>	<b>5.5</b>	<b>9</b>	<b>1.6</b>	<b>24</b>	<b>4.8</b>

**SCENARIO NUMBER 3  
Alternate 2**

Planning Period	Single Family	Acreage	Multi-Family	Acreage	Mobile Home	Acreage
1978 - 1985	0	—	0	—	0	—
1985 - 2000	8	4	10	1.7	33	6.6
<b>TOTAL</b>	<b>8</b>	<b>4</b>	<b>10</b>	<b>1.7</b>	<b>33</b>	<b>6.6</b>







